

**PTZ CAMERA
CONTROL UNIT
RMC-180**

Instruction manual

Table of Contents

FCC COMPLIANCE STATEMENT	3
WARNINGS AND PRECAUTIONS.....	3
WARRANTY.....	4
STANDARD WARRANTY	4
THREE YEAR WARRANTY	4
DISPOSAL.....	4
1. INTRODUCTION.....	5
1.1 FEATURES	5
1.2 COMPATIBLE CONTROL STANDARDS	5
2. CONNECTIONS AND CONTROLS	6
2.1 FRONT PANEL – KEYBOARD	6
2.2 REAR PANEL – CONNECTIONS.....	9
3. MENU SETUP	11
FN1. EXIT	12
FN2. USB HID MODE.....	12
FN3. CAM ADDR	12
FN4. JOYSTICK DIR	12
FN5. VIDEO FORMAT	12
FN6. POWER.....	13
FN7. SCREEN MODE	13
FN8. MEMORY SPEED.....	13
FN9. TALLY LED MODE	13
FN10. R/B GAIN ADJ	13
FN11. FIRMWARE VER.....	13
FN12. CAM INFO.	13
4. STORING DIFFERENT CAMERA POSITIONS	14
5. TALLY INPUT CONNECTOR	15
6. FIRMWARE UPGRADE PROCEDURE	16
7. DIMENSIONS.....	19
SERVICE AND SUPPORT.....	20

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.

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

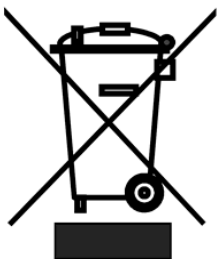
- Datavideo equipment are guaranteed against any manufacturing defects for one year from the date of purchase.
- The original purchase invoice or other documentary evidence should be supplied at the time of any request for repair under warranty.
- The product warranty period begins on the purchase date. If the purchase date is unknown, the product warranty period begins on the thirtieth day after shipment from a Datavideo office.
- 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.
- 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.

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

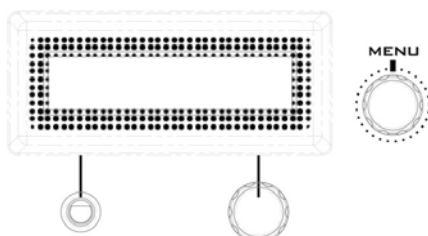
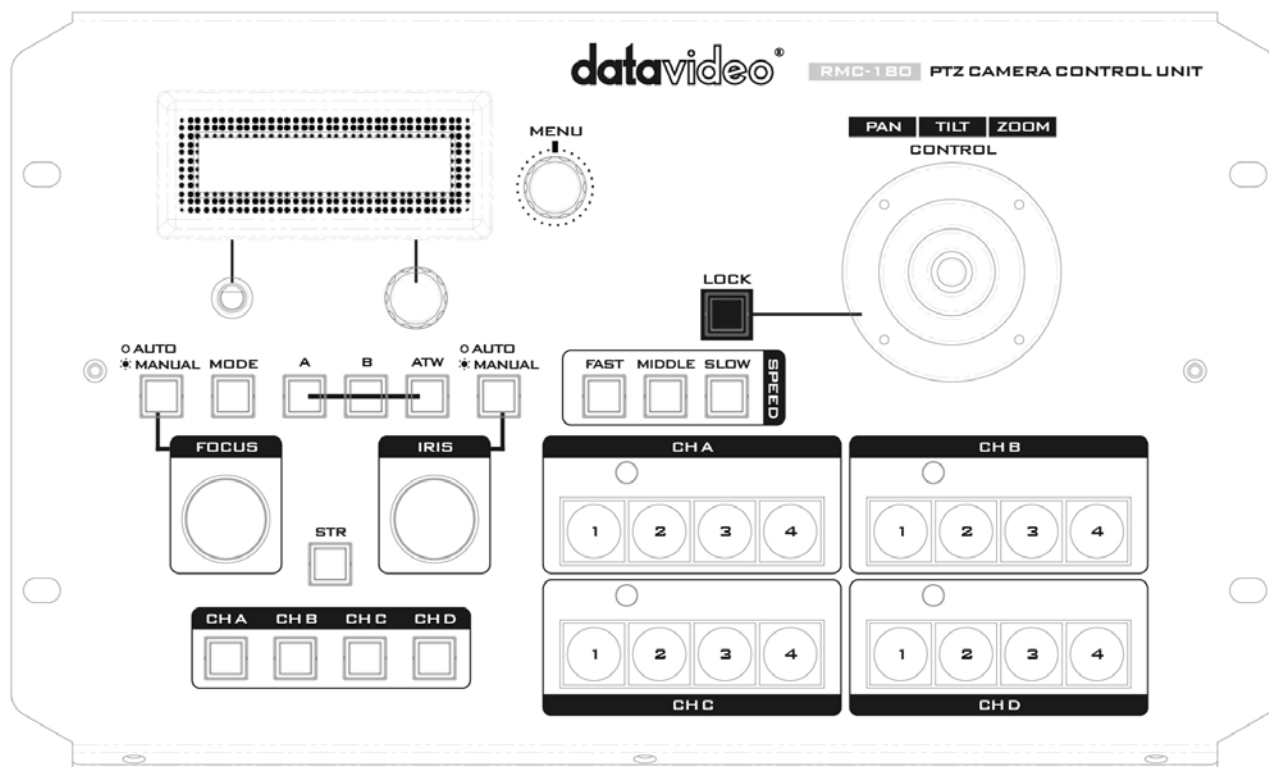
Depending on your chosen PTZ camera(s) the following control standards are available.

- 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

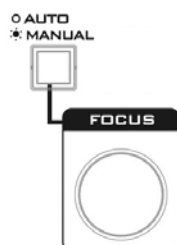


LCD Display

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.



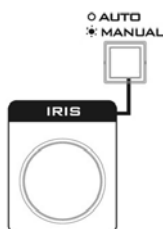
Mode Select

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.



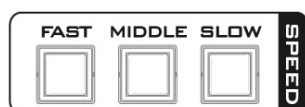
PTZ Joystick Control

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.



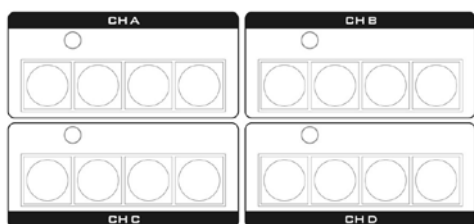
Speed

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

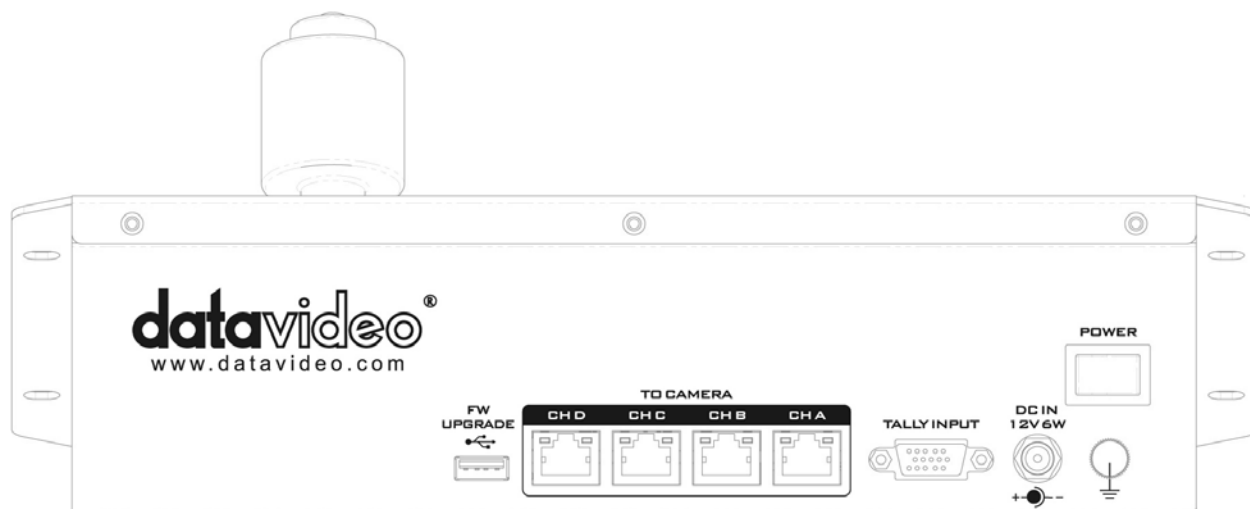
These buttons may be used to store up to four camera positions for each camera. Each button corresponds to one stored camera position. The activated button LED will be turned ON.

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.

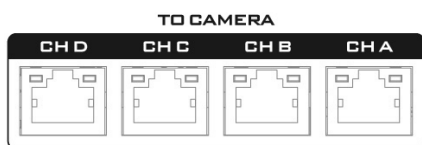
When the HS-2000 or HS-2200 Switcher is sending camera A's video to the program output, the RMC-180 CH A's tally LED will be turned ON. Additional equipment and cabling are required.

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

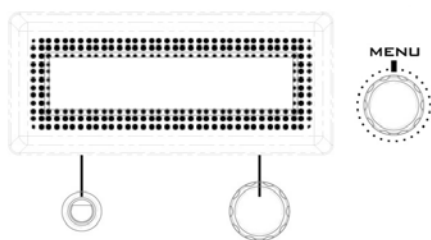
Switches the device ON / OFF.



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 cameras position:

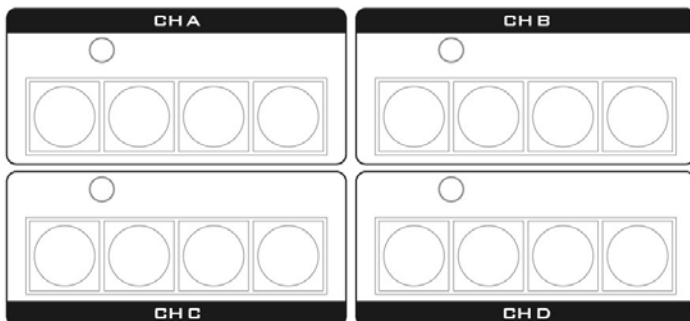
1. Select a camera first: CH A / CH B / CH C / CH D



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.



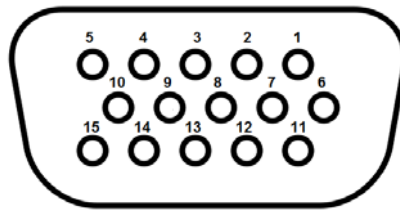
4. As soon as the corresponding four memory buttons of the selected camera channel start flashing, simply select and press a memory button to save the current PTZ setting, focus, iris and zoom.



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

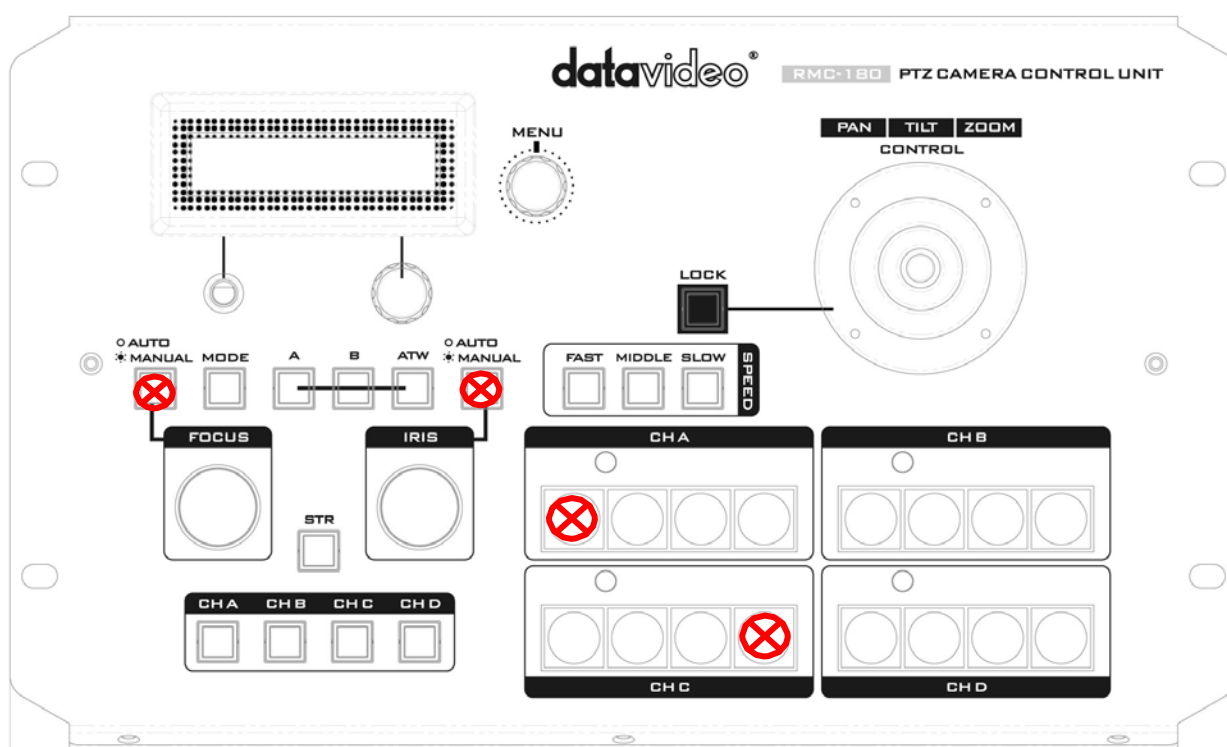
- Latest firmware update files (bootloader and application firmware)
- A USB A to USB A cable not longer than 2 meters
- A Windows PC with USB 2.0 ports


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



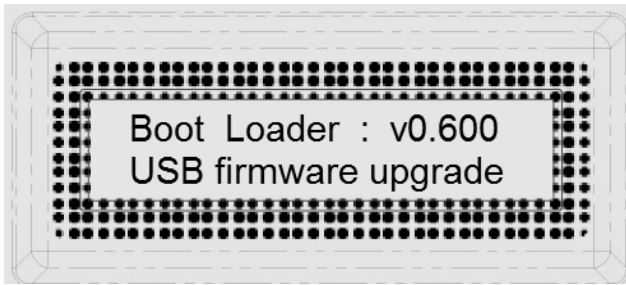
on the RMC-180 rear panel and a USB port on the computer

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

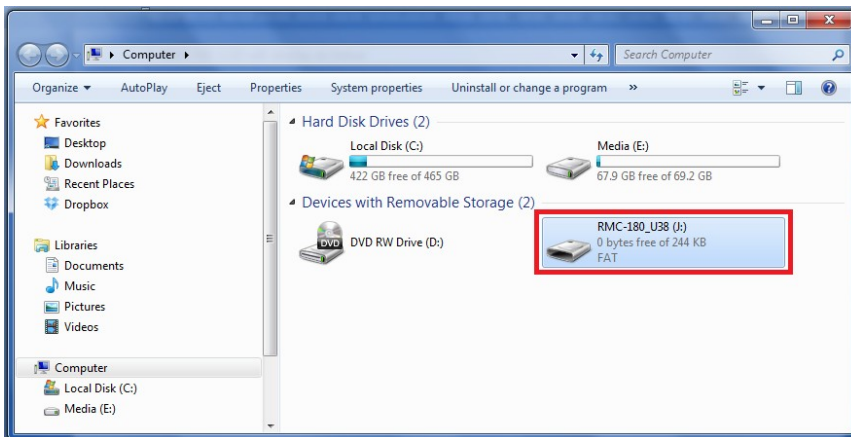


3. With an assistant's help, one person switches on the RMC-180 device while another person presses and holds the buttons indicated with 

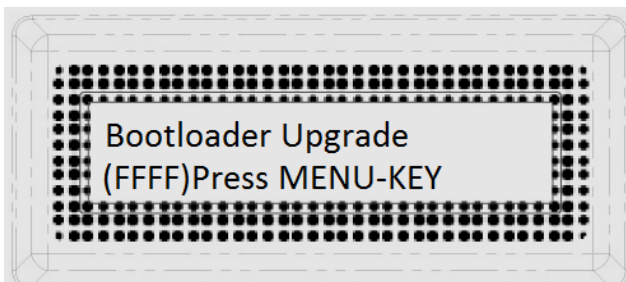
4. The user may release the buttons once the RMC-180 LCD displays the following information.



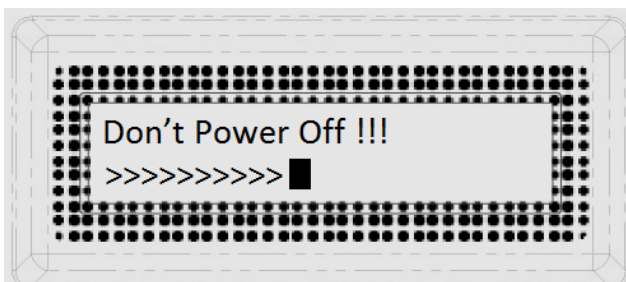
5. The RMC-180 device (**RMC-180_U38**) will appear as a removable storage device on the PC as shown below.



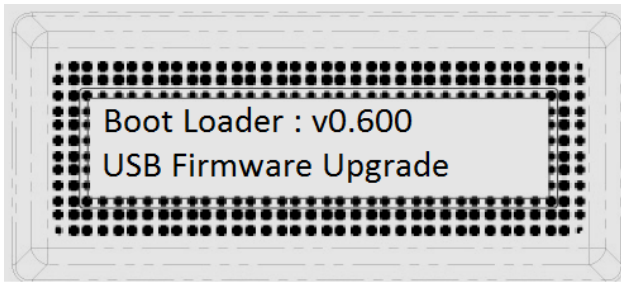
6. Double click on the RMC-180_U38 removable storage device and delete the "bootcode.bin" file
7. Copy and paste the latest firmware file (bootcode.bin) into the RMC-180_U38 removable storage device
8. Reboot the RMC-180 device until the LCD displays the following




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



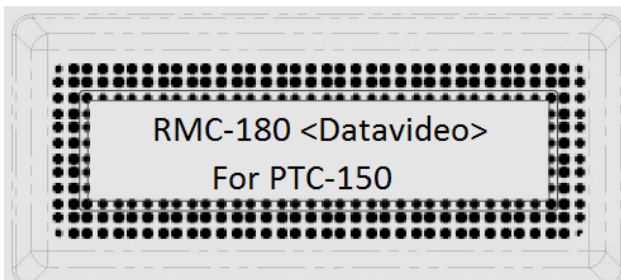
10. After the bootloader firmware upgrade is complete, the LCD display will show the following and the user may proceed to upgrading the application firmware.



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

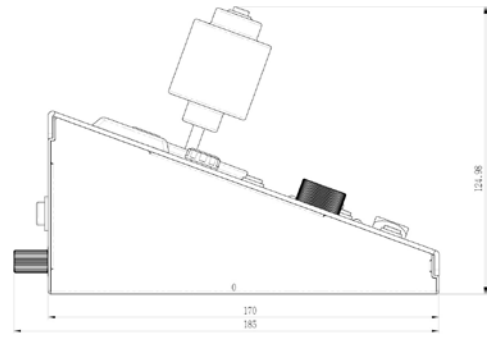
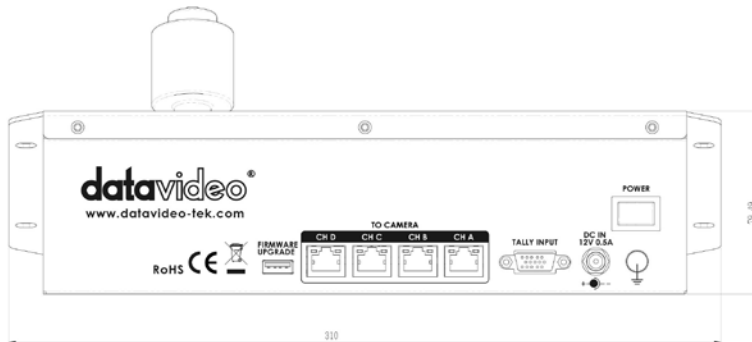
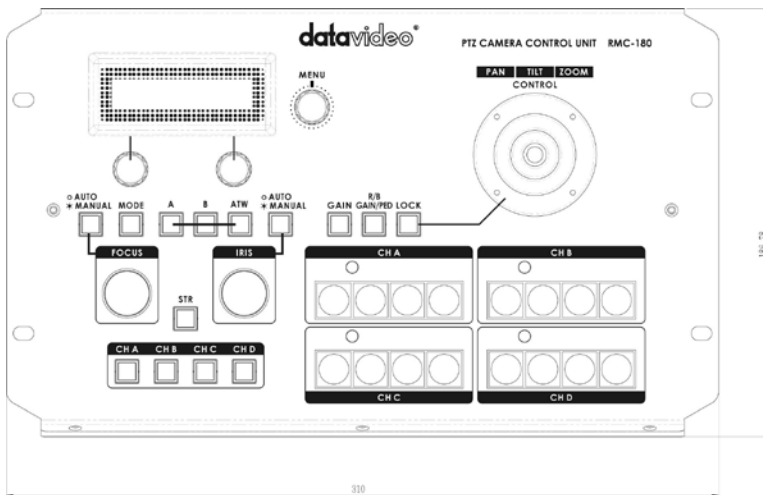
Name	Date modified	Type	Size
 RMC180_PTC150_1v002	2015/5/14 下午 0...	BIN 文件	76 KB

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



All measurements in millimeters (mm)

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.

China Shanghai
Datavideo Technologies China Co
601, Building 10, No. 1228,
Rd. Jiangchang,
Jingan District, Shanghai
Tel: +86 21-5603 6599
Fax: +86 21-5603 6770
E-mail: service@datavideo.cn

China Beijing
Datavideo Technologies China Co
No. 812, Building B, Wankai Center,
No. 316, Wan Feng Road, Fengtai District,
Beijing, China
Tel: +86 10-8586 9034
Fax: +86 10-8586 9074
E-mail: service@datavideo.cn

China Chengdu
Datavideo Technologies China Co
B-823, Meinian square, No. 1388,
Middle of Tianfu Avenue, Gaoxin District,
Chengdu, Sichuan
Tel: +86 28-8613 7786
Fax: +86 28-8513 6486
E-mail: service@datavideo.cn

China Fuzhou
Datavideo Technologies China Co
A1-2318-19 Room, No. 8, Aojiang Road,
Taijiang District, Fuzhou, Fujian, China
Tel: 0591-83211756 + 0591-83210187
Fax: 0591-83211262
E-mail: service@datavideo.cn

China Jinan
Datavideo Technologies China Co
902, No. 1 business building,
Xiangtai Square, No. 129,
Yingxiangshan Road, Shizhong District,
Jinan City, Shandong Province, China
Tel: +86 531-8607 8813
E-mail: service@datavideo.cn

Hong Kong
Datavideo Hong Kong Ltd
G/F., 26 Cross Lane
Wanchai, Hong Kong
Tel: +852-2833-1981
Fax: +852-2833-9916
E-mail: info@datavideo.com.hk

India Noida
Datavideo India Noida
A-132, Sec-63, Noida-201307,
India
Tel: +91-0120-2427337
Fax: +91-0120-2427338
E-mail: sales@datavideo.in

India Kochi
Datavideo India Kochi
2nd Floor- North Wing, Govardhan Building,
Opp. NCC Group Headquarters, Chittoor Road,
Cochin- 682035
Tel: +91 4844-025336
Fax: +91 4844-047696
E-mail: sales@datavideo.in

Netherlands
Datavideo Technologies Europe BV
Floridadreef 106
3565 AM Utrecht,
The Netherlands
Tel: +31-30-261-96-56
Fax: +31-30-261-96-57
E-mail: info@datavideo.nl

Singapore
Datavideo Visual Technology(S) Pte Ltd
No. 178 Paya Lebar Road #06-07
Singapore 409030
Tel: +65-6749 6866
Fax: +65-6749 3266
E-mail: info@datavideovirtualset.com

Singapore
Datavideo Technologies (S) PTE Ltd
No. 178 Paya Lebar Road #06-03
Singapore 409030
Tel: +65-6749 6866
Fax: +65-6749 3266
E-mail: sales@datavideo.sg

Taiwan
Datavideo Technologies Co. Ltd
10F. No. 176, Jian 1st Rd., Chung Ho
District, New Taipei City 235, Taiwan
Tel: +886-2-8227-2888
Fax: +886-2-8227-2777
E-mail: service@datavideo.com.tw

United States
Datavideo Corporation
7048 Elmer Avenue.
Whittier, CA 90602,
U.S.A.
Tel: +1-562-696 2324
Fax: +1-562-698 6930
E-mail: sales@datavideo.com

United Kingdom
Datavideo UK Limited
Brookfield House, Brookfield Industrial
Estate, Peakdale Road, Glossop,
Derbyshire, SK13 6LQ
Tel: +44-1457 851 000
Fax: +44-1457 850 964
E-mail: sales@datavideo.co.uk

France
Datavideo France s.a.r.l.
Cité Descartes 1, rue Albert Einstein
Champs sur Marne 774477 –
Marne la Vallée cedex 2
Tel: +33-1-60370246
Fax: +33-1-60376732
E-mail: info@datavideo.fr



Please visit our website for latest manual update.
www.datavideo.com/product/RMC-180

datavideo
www.datavideo.com