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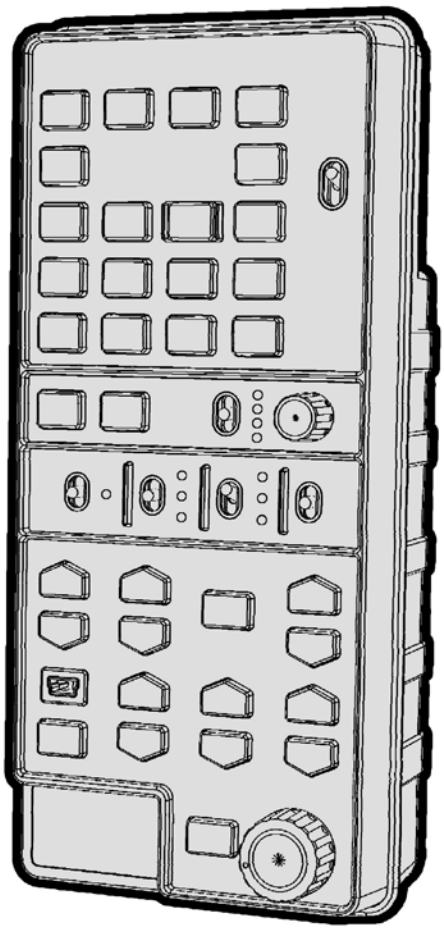

MULTI-CAMERA
CONTROL UNIT

MCU-100J

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 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 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

The MCU-100J Remote Control Unit is designed for remote control of JVC studio or portable-type colour video cameras and camcorders.

The unit allows the user to directly connect up to maximum 4 cameras or camcorders via a Cat.5e or Cat.6 Ethernet cable and control the connected camera or camcorder from a distance of up to 300 m.

The MCU-100J is definitely a total solution for easy operation of major camera functions in a cost effective way.

Features

- Four RJ-45 connections allow remote setup of up to four JVC cameras.
- RJ-45 cabling allows the unit to be placed up to 300m away from the camera(s).
- Support LANC & multicore control interface.
- Control of Record and Record review functions.
- Control of Camera User memory functions.
- Control of Shutter / Focus / Zoom functions.
- Control of Iris adjustment.
- Control of AWB function.
- Control of White Balance A, B and Preset functions.
- Control of Camera Gain adjustment.
- RGB Black Level / R & B gain and Master Pedestal controls.

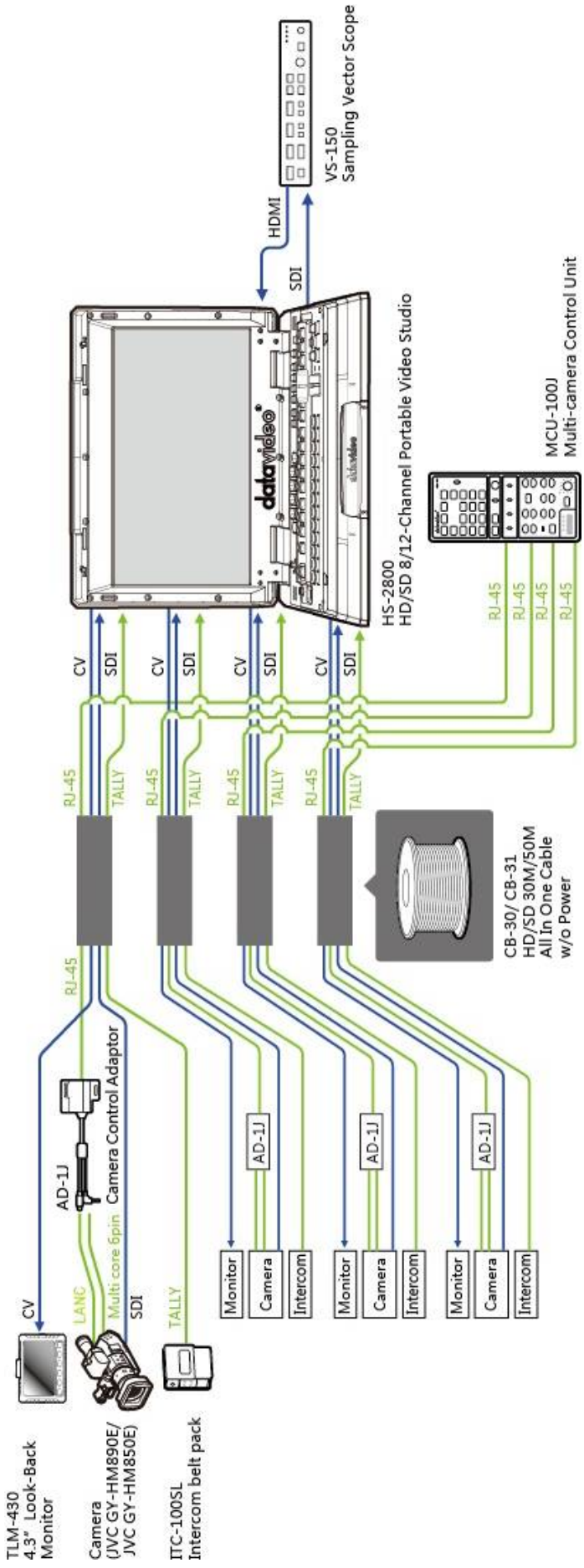
Compatible Camera Models

The MCU-100J is designed specifically for use with JVC cameras or camcorders. Compatible Camera Models are listed as follows:

- GY-HM750
- GY-HM890U
- GY-HM850U
- GY-HM650U
- GY-HM600U
- GY-LS300CHU

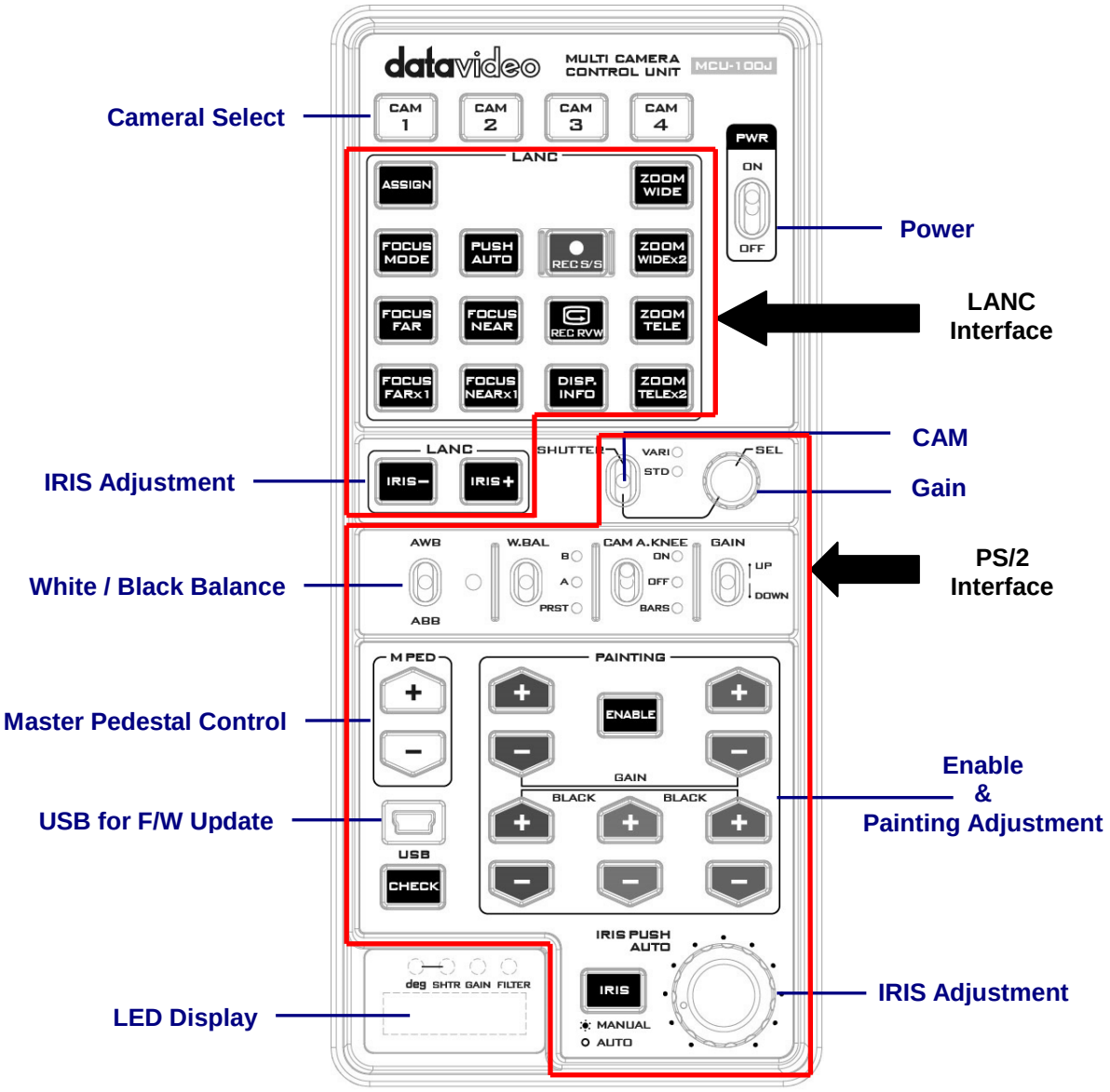
Note: MCU-100J must be switched on first before you switch on your camera.

System Diagram

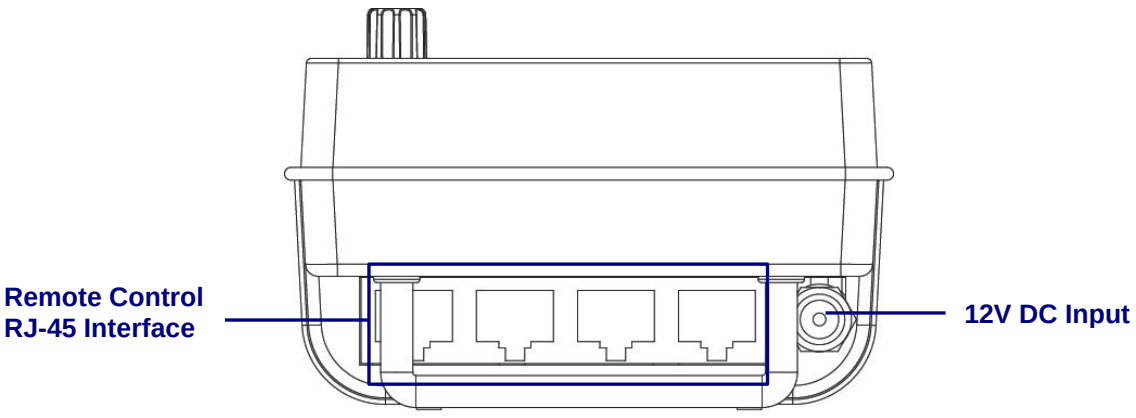


Connections and Controls

MCU-100J Keyboard



MCU-100J Front Panel



MCU-100J Keyboard Guide

Power switch
Turns the MCU-100J Unit ON/OFF

Camera selection
Pressing the corresponding camera button selects the camera that the user would like to control.

Assign
Press to save a set of user settings to the memory

Focus Mode
Press to allow switching between different focus modes (AF or MF)
Note: If the focus mode is not changed after pressing the button, check your camera and make sure its AF mode is turned ON.

Push Auto
Press to enable Auto Focus and after Auto Focus is finished, the camera will return to MF mode.

Focus Far
Far field focus
Note: If camera focus is not triggered after this button is pressed, push and hold the button till your camera's focus setting starts to change.

Focus Far x 1
Far field focus x 1
Note: If camera focus is not triggered after this button is pressed, push and hold the button till your camera's focus setting starts to change.

Focus Near
Near field focus
Note: If camera focus is not triggered after this button is pressed, push and hold the button till your camera's focus setting starts to change.

Focus Near x 1
Near field focus x 1
Note: If camera focus is not triggered after this button is pressed, push and hold the button till your camera's focus setting starts to change.

DISP. INFO
Press to display camera LCD information

REC S/S
Press to start / stop recording

REC RVW
Review recorded video for a set time

Zoom
Wide angle zoom

Zoom Wide x 2
Wide angle zoom x 2

Zoom Tele
Telephoto zoom

Zoom Tele x 2
Telephoto zoom x 2

IRIS Control on LANC
Non-Functional

SHUTTER: Shutter mode toggle switch

VARI: Extended Clear Scan (ECS)

STD: Standard Shutter

SEL - Select dial
The select dial is used for navigating through the menus or controlling the shutter speed.

When the MENU button is activated and back lit orange, the select dial is used to cycle through camera's menu options. Pressing the same dial like a button confirms the current selection or value shown.

When the MENU button is NOT activated and back lit green. The select dial is used to adjust the SHUTTER speed of the camera.

AWB (Auto White Balance) / ABB (Auto Black Balance) toggle switch with LED
This toggle switch is used to trigger Auto White Balance (AWB) or Auto Black Balance (ABB) adjustment.

AWB
White balance is adjusted automatically and the value to which the white balance was adjusted will be stored in memory A or memory B depending on where the W.BAL toggle switch is toggled to (A or B).
After the camera finishes performing AWB, R Gain, B Gain, R Black, B Black and M PED will return to 128.

ABB
Not supported

LED ON: Auto white balance in progress.
LED OFF: Auto white balance completed.

W.BAL Toggle Switch
This switch is used to recall the preset or stored values of white balance in the camera.

Memory A or B: This will apply the value stored in the white balance memory A or B in the camera recorder. When the AWB switch is set to the AWB position, the white balance is automatically adjusted and the value adjusted is stored in the selected memory A or B.

PRST
This will apply the preset value of the white balance stored in the camera recorder.

CAM A.KNEE Toggle Switch
Selects the camera's video output signal.

BARS
Camera generated colour bar output

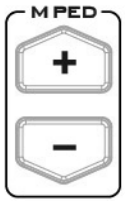
CAM. AUTO KNEE OFF
Output is the camera shot. The AUTO KNEE circuit is disabled. MANUAL KNEE is set as the camera recorder's initial setting.

CAM. AUTO KNEE ON
Output is the camera shot. The AUTO KNEE circuit is enabled.

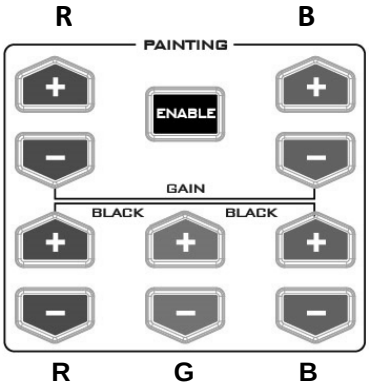
NOTE: AUTO KNEE circuit will be ineffective if DRS (Dynamic Range Stretch) function is enabled. It is also possible to allocate the MANUAL KNEE and DRS functions via the menu settings on the camera.

GAIN switch
Allows selection of the video amplifier gain depending on the lighting conditions that are present in the camera's location.

Moving the switch upwards increases the gain in dB steps.
Moving the switch downwards decreases the gain in dB steps.



Master Pedestal Control
These buttons are used to adjust the level of the Master Pedestal.



Enable & Painting Adjustment buttons

- Press the **ENABLE** button in the ***Painting area*** of the MCU-100J before choosing to adjust either the level of the Red and Blue Gain or the RGB Pedestal values.
- Once pressed, the **ENABLE** button will turn red and all +/- buttons will turn white.
- Press again to turn off the **ENABLE** button (white), and all other +/- button will be disabled with the button LEDs turned off.

Fast zeroing of parameters

1. Press and hold the ENABLE button until the +/- button LEDs start flashing.
2. Press one of the corresponding +/- buttons to reset R Gain, B Gain, R Black, and B Black to default (128).
3. If nothing is pressed, the button LEDs will stop flashing and return to normal after 10 seconds.

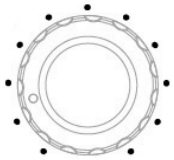
Mini USB 2.0 port
This port is used for firmware updates or to save/transfer MCU-100J settings to computer. See ***page 14*** for firmware update details.

LED display
The IRIS Value, Shutter Degree, and Gain can be displayed here by pressing the IRIS button.

Note: The IRIS value displayed on the camera's LCD panel is usually more precise than the IRIS value displayed on the MCU-100J LED display.

IRIS button
To enable or disable Auto Iris.

The button is backlit red when MANUAL Iris is enabled.



IRIS control
Used to adjust the Iris value. See IRIS button also.

Check button
No function

Seven segment display and LEDs

SHTR	SHUTTER (speed) value is displayed when SHTR LED is ON.
GAIN	GAIN value (in dB) is displayed when GAIN LED is ON.
FILTER	Currently disabled

Version Number Display and LED Backlight Brightness Control

To check the firmware version number and adjust the LED backlight brightness, simply follow the steps outlined as follows.

- Move the toggle switch

to “Bars”, and then hold down the “CAM A. Knee” toggle switch while long pressing the button

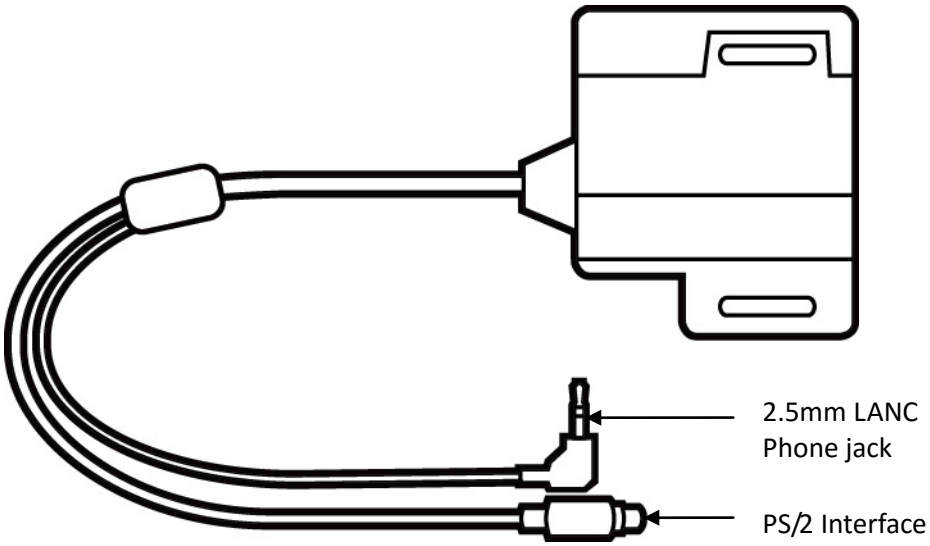
at the same time until the seven segment display shows F1-1
- Rotate SEL knob

to cycle through F1-1, F1-2 and F1-3 on the seven segment display

- Press SEL knob to enter the individual F1 functions. The table below contains descriptions of each individual F1 function.

F1-1	**MCU-100J Version display**
F1-2	**AD-1 Version display**
F1-3	**LED backlight brightness level display (the brightness level ranges from 0 to 15)** The user is allowed to change the brightness level by rotating the SEL knob and to save the brightness setting, simply press the SEL knob again. After the selected brightness is saved, the new setting will only be effective after the next reboot of the MCU-100J. Please note that the **default brightness is 10**.

AD-1J Camera Control Adaptor



This unit allows you to operate the JVC camera with the MCU-100J unit at a distance of up to 300m away from the camera.

The AD-1J adaptor connects the MCU-100J to the selected JVC camera via an RJ-45 cable. This adaptor adapts the RJ-45 connection to a JVC LANC and PS/2 Control Interface.

The table below lists all the functions that can be controlled via LANC and PS/2 Control Interfaces.

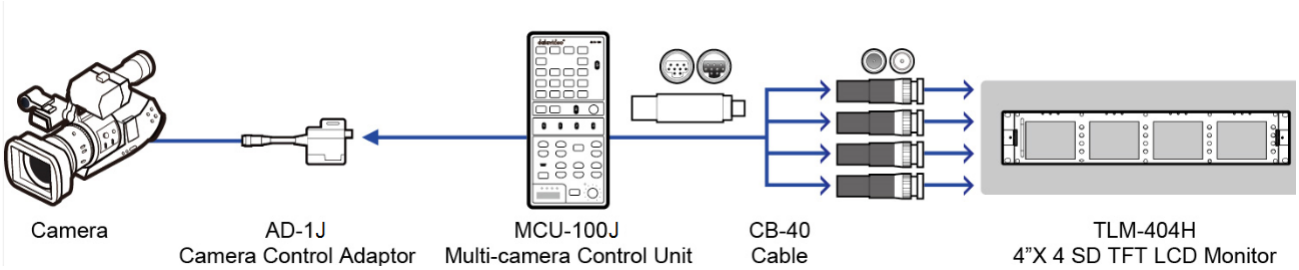
MCU-100J Command	
LANC	**Multicore PS/2**
REC ON/OFF	Shutter
ZOOM WIDE	AWB
ZOOM TELE	W.BAL
ZOOM WIDE (2 speed)	KNEE
ZOOM TELE (2 speed)	COLOR BAR
CHANGE AF MANUAL/AUTO (FOCUS MODE)	GAIN
PUSH AF AUTO	Master Pedestal
FOCUS NEAR	R & B gain / RGB Black Level
FOCUS NEAR x 1 speed	
FOCUS FAR	
FOCUS FAR x 1 speed	
IRIS+	
IRIS-	
DISP INFO	
REC REVIEW	
Assign	

NOTE: **For camera with the MCU-100J connected, please set camera remote control function to ON and then connect the MCU-100J and AD-1J.**

NOTE: **With the AD-1J connected, the menu and other functions of the JVC camera may be limited to remote control only. To regain manual control of the menu functions on the camera, the user should first disconnect the AD-1J.**

Each AD-1J adaptor has a built in Velcro strap so that the unit can be quickly mounted in a convenient location on or near the camera.

A micro USB 2.0 port is provided for transfer of firmware updates to the unit. See ***Firmware Update Section*** for more details.



Firmware Update Procedure

Datavideo usually releases new firmware containing new features or reported bug fixes from time to time. Customers can either download the firmware from our official website or contact their local dealer or reseller for assistance.

This page describes the firmware update process and it should take ***approximately 20 minutes to complete***.

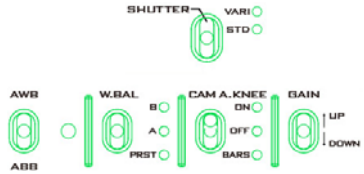
Once started ***the update process should not be interrupted in any way*** as this could result in a non-responsive unit.

To start the firmware update procedure, you will need:

- The latest firmware update for the ***AD-1J*** units ***and*** the ***MCU-100J***.
- USB 2.0 cable with a USB A type connector and a Micro USB connector.
- A Computer with a USB 2.0 port running Windows Vista or 7.

Note: It is recommended to update the firmware of the ***AD-1J*** unit(s) at the same time as the ***MCU-100J***.

How to update the MCU-100J firmware

1. Turn off the MCU-100J device power.
2. Connect the MCU-100J to PC via a USB cable.
3. Set the five 

switches on the MCU-100J to their middle position.
4. Move

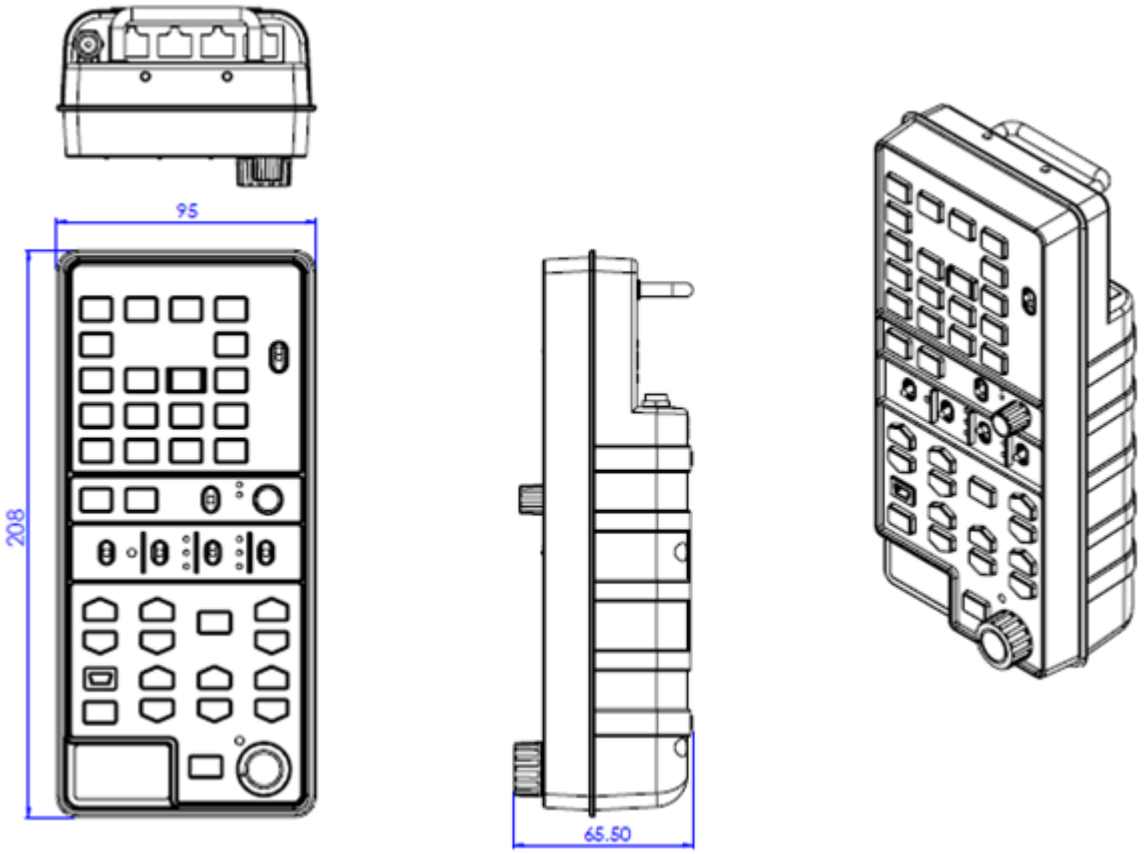
switch up towards **(AWB)** and at the same time also press the **shutter select** button. Hold both in place.
5. Turn on the MCU-100J power.
6. MCU-100J LED display will show "**L-x.x**", and the PC will find MCU-100J by USB 2.0.
7. Open "**MCU-100J_U1**" folder on PC.
8. Delete the **bootcode.bin** file in "MCU-100J_U1" folder.
9. Copy new **xxxxxxxxx.bin** file to the "MCU-100J_U1" folder. Do not worry about the new file name; the MCU-100J will amend the file name automatically after reboot.
10. Reboot MCU-100J.

How to update the AD-1J firmware

1. Connect AD-1J to PC via a USB cable
2. Power on PC
3. Copy the XXXXXXX_XXXXX.bin file to AD-1J from the PC.

Note: It is recommended to update the firmware of the ***AD-1J*** unit(s) at the same time as the ***MCU-100J***.

Dimensions



Specifications

Power Consumption	DC 12V / 0.5A (6W)
Weight	350 g
Dimensions	95mm (W) x 208mm (H) x 65.5mm (D)
Input /Output Connection	RJ45 x 4
Connection Distance	Up to 300m (CAT-5 / 5e or CAT6)

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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Mar-08 2017 P/N: G08206458584