

MasterConsole[®] Digital DUAL

DUAL Display Cat5 KVM switches User Guide

v1.0

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Chapter 1 Introduction



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Overview

MCD-DUAL switch MCD-104-DUAL and MCD-108-DUAL is a series of KVM (keyboard/video/mouse) switch that enables you to control multiple computers from a single set of keyboard, mouse, and dual-monitor. Connect the keyboard, mouse, monitor, and all computers to an MCD-DUAL switch and you will be able to switch among computers connected to the MCD-DUAL switch. If cascading MCD-DUAL switches to form a two-tier MCD-DUAL system, the number of accessible computers can be expanded up to a maximum of 16 (MCD-104-DUAL)/64 (MCD-108-DUAL) computers. MCD-DUAL switch features the use of standard Category 5 (Cat5) unshielded twisted-pair (UTP) cables for connecting computers. In terms of operation, it provides a friendly OSD (On-Screen Display) interface for simple system configuration.

Features

- Console : dual DVI-I (analog & digital) + 2x USB Type-A
- Support high video resolution up to 1920 x 1200@60Hz (Analog), 1920 x 1080@60Hz (Digital)
- Channel select: 4/8 port two colors of LEDs to indicator each port operation status (Green-PC select/White-Online)
- Support 2 tiers cascade to access max. 16/64 computers
- Borderless Mouse Switching function to easily switch channels by moving mouse cursor
- User privileges allow one administrator to set different channel access rights to maximum of 15 user accounts
- Power switch with lighting: Inter socket
- CAT5 Connector: 8/16 RJ45 ports
- Supports MDCIMs: DVI / HDMI / DP (CAT5 distance max. 45 meter/150 feet)
- Supports MDUTP Cables: VGA + Audio (2/4/6/15 meter)
- Operate with hotkeys on-screen-display menus
- Auto-Skip function to bypass inactive channels; Auto-Scan computers at variable rates
- Firmware upgradeable
- Rack-mountable
- Backward compatibility with all type of CIMs:
 - MDCIM-DVI/HDMI/DP
 - MDUTP20-VGA/ MDUTP40-VGA/ MDUTP60-VGA/ MDUTP150-VGA

Note: CAC and USB Touch screen are NOT supported.

Package Contents

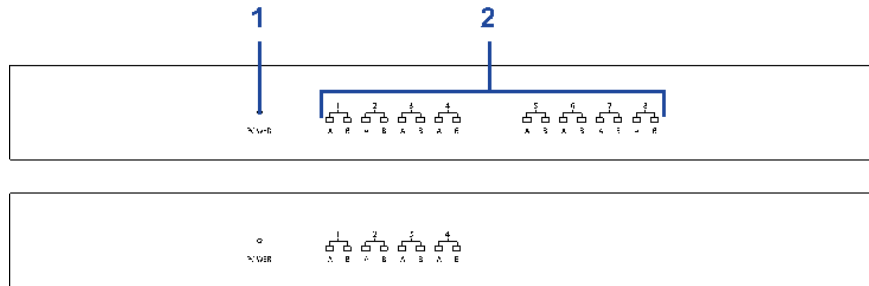
- MCD-DUAL KVM Switch x 1
- Power Cord x 1
- Rackmount Kit x 1 (including brackets and associated screws)
- DVI-I to VGA Adapter x 2
- Quick Setup Guide x 1

Specifications

Model Name	MCD-104-DUAL	MCD-108-DUAL
Console Connections	1	1

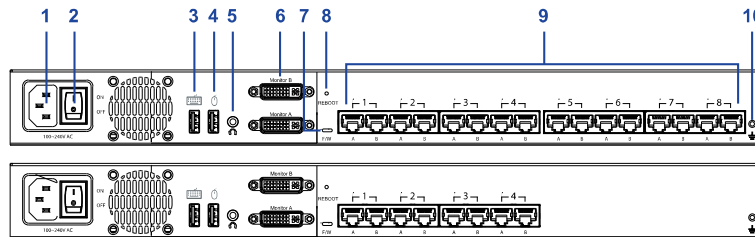
Computer Connections (Dual View)		4	8		
Console Selection	Hot-Key				
	OSD menu				
Connectors	Console Port	Keyboard	1 x USB Type A Female (White)		
		Mouse	1 x USB Type A Female (White)		
		Video	2 x DVI-I Female (White)		
		Audio	1 x 3.5mm Audio Jack (Black)		
	Computer Ports	Direct	8 x RJ45 Female (Black)	16 x RJ45 Female (Black)	
		Maximum	16 (Cascade)	64 (Cascade)	
	Firmware Upgrade		1 x micro USB Female		
	Reset button port		1 x Tact Switch		
Power		1 x AC Socket with light power switch			
LEDs	Operation Indication	Online	4 (White)	8 (White)	
		Selected	4 (Green)	8 (Green)	
	Power	Power-On	1 (White)		
Video Resolution	1920 x 1200@60Hz (VGA) ,1920 x 1080@60Hz (DVI) , DDC2B				
Power	Maximum Input Power Rating	AC 100-240V, 1.5A			
	Power Consumption	DC 12V/5.42A (65W)			
Environment	Operating Temp.	0-50°C			
	Storage Temp.	-20°C-60°C			
	Humidity	0-80% RH , Non-condensing			
Physical	Housing	Metal			
	Weight	1830g	1860g		
	Dimension (L x W x H)	440 x 150 x 44mm			
Safety	CE/FCC/VCCI/UL				
MTBF		140,689 hours	105,038 hours		

Front View



▶ 1	Power LED	<ul style="list-style-type: none"> White LED lights on after powering on the MCD-DUAL.
▶ 2	Channel LEDs	<ul style="list-style-type: none"> "inactive" channels with LEDs light off. "active" channels with White LEDs light on. "being accessed" channels with Green LEDs light on.

Rear View



▶ 1	Power Socket	<ul style="list-style-type: none"> ▪ Connect the power cord.
▶ 2	Power Switch	<ul style="list-style-type: none"> ▪ Toggle the power on or off.
▶ 3	USB Port (keyboard)	<ul style="list-style-type: none"> ▪ Connect a USB keyboard.
▶ 4	USB Port (mouse)	<ul style="list-style-type: none"> ▪ Connect a USB mouse.
▶ 5	Audio Output Port	<ul style="list-style-type: none"> ▪ Connect audio input devices, such as speakers or headphone.
▶ 6	2 x DVI-I Connector (Monitor A/ Monitor B)	<ul style="list-style-type: none"> ▪ Connect monitors. OSD will show on Monitor A only. (If your monitor does not have a DVI connector, an appropriate video converter or adapter is required.)
▶ 7	Firmware Upgrade Connector	<ul style="list-style-type: none"> ▪ Connect a computer for upgrading the MCD-DUAL's firmware.
▶ 8	Reboot Button	<ul style="list-style-type: none"> ▪ Reboot this KVM switch.
▶ 9	Channel Ports	<ul style="list-style-type: none"> ▪ Connect to computers, each channel with 2x RJ45 ports.
▶ 10	Chassis Ground	<ul style="list-style-type: none"> ▪ An easy-to-connect chassis ground to prevent any electrical shock.

Chapter 2 Installation

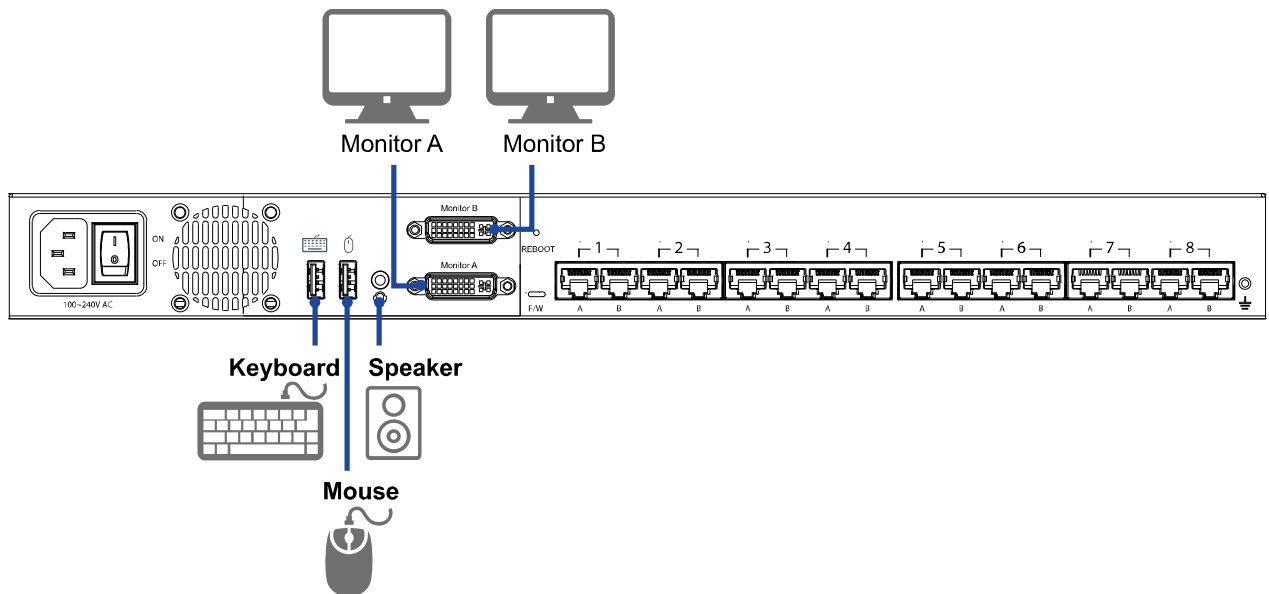
Note: Please turn off all MCD-DUAL and computers before system installation.

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Select Proper MDCIMs or MDUTPs	7
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Console Connection

Connect a USB keyboard/mouse, speaker and monitors to the connectors on the MCD-DUAL. (If using a VGA monitor, a DVI-I to VGA adapter is required.)



Select Proper MDCIMs or MDUTPs

Choose appropriate MDCIMs or MDUTP cables according to your computer's video port and audio requirements.

MCD CIM type	Video type	Audio transmission
MDUTP cables	VGA	Support analog audio
MDCIM-HDMI	HDMI	Support digital audio
MDCIM-DVI	DVI	NO support
MDCIM-DP	Display Port	NO support

Note: *If the MDCIM or MDUTP cable you purchase is not compatible with the video port on your computer, the alternative solution is to use a video converter or adapter to connect MDCIM or MDUTP.*

Computer Connection

One-tier Connection

- Plug the MDCIM or MDUTP cable's USB connectors into one of the computer's USB ports.
- Plug the MDCIM or MDUTP cable's video connectors into the computer's video ports.
- Optionally, plug the MDUTP cable's audio connector into the computer's audio output port.
- Connect the MDCIM to MCD-DUAL by using a standard network patch cable (Cat5e/6 UTP). The MDUTP is combined with a standard network patch cable; you can use it to connect with MCD-DUAL directly.
- Repeat the above steps to connect more computers.

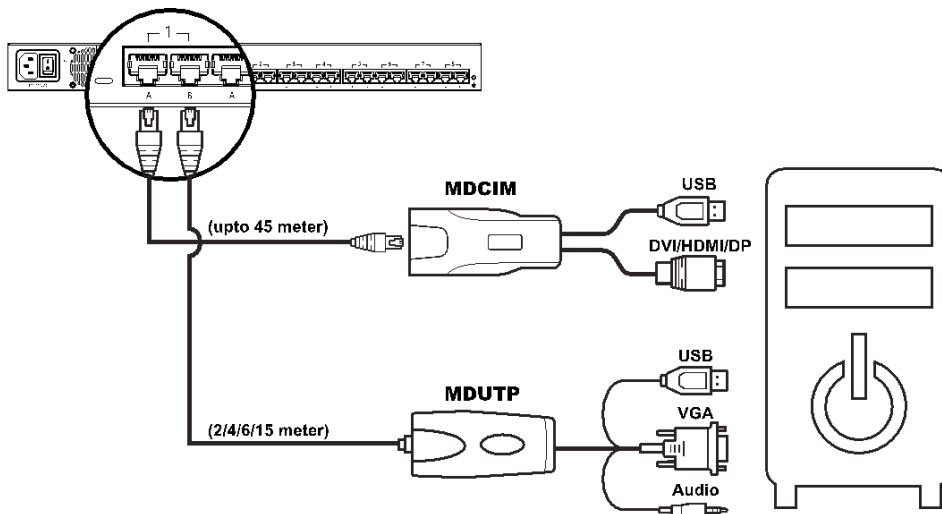
Note:

Please make sure the MDCIM or MDUTP must connect to the same channel of MCD-DUAL.

The signals of USB keyboard/mouse and audio are transmitted via "RJ45 Port A" only.

For single-monitor connection, please make sure the MDCIM or MDUTP must connect to "RJ45 Port A".

For both single-monitor and dual-monitor connections, please make sure the computer's audio output is set for the MDCIM or MDUTP which is connected to "RJ45 Port A".



Two-tier Connection

Step A

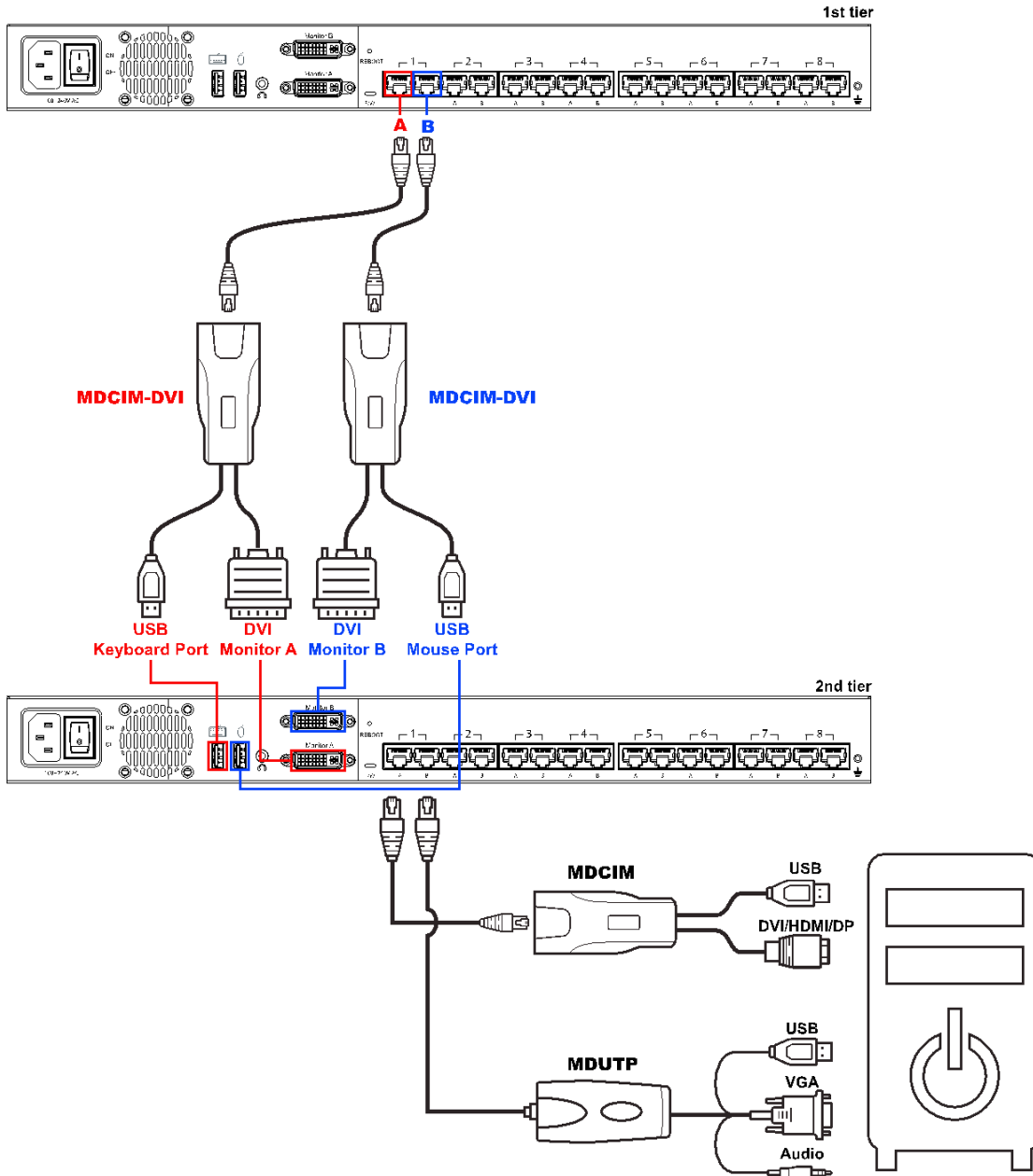
- Plug the MDCIM-DVI cable's USB connectors into the 2nd-tier MCD-DUAL's USB Keyboard port.
- Plug the MDCIM-DVI cable's DVI connectors into the 2nd-tier MCD-DUAL's Monitor A port.
- Connect the MDCIM-DVI to "Channel 1: RJ45 Port A" of the 1st-tier MCD-DUAL by using a standard network patch cable (Cat5e/6 UTP).

Step B

- Plug the MDCIM-DVI cable's USB connectors into the 2nd-tier MCD-DUAL's USB Mouse port.
- Plug the MDCIM-DVI cable's DVI connectors into the 2nd-tier MCD-DUAL's Monitor B port.
- Connect the MDCIM-DVI to "Channel 1: RJ45 Port B" of the 1st-tier MCD-DUAL by using a standard network patch cable (Cat5e/6 UTP).

Step C

- Repeat the above steps to connect more 2nd-tier MCD-DUAL
- Repeat the steps of "One-tier Connection" to connect more computers.



Chapter 3 Hotkeys

In This Chapter

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Hotkey Summary Table

Hotkeys are executed using only the keyboard.

The default hotkey is [Scroll Lock] and can be changed in OSD menu.

Keying Hotkey command must be completed with 6 seconds, or it will be aborted if exceeding.

▶ [Hotkey Summary Table](#)

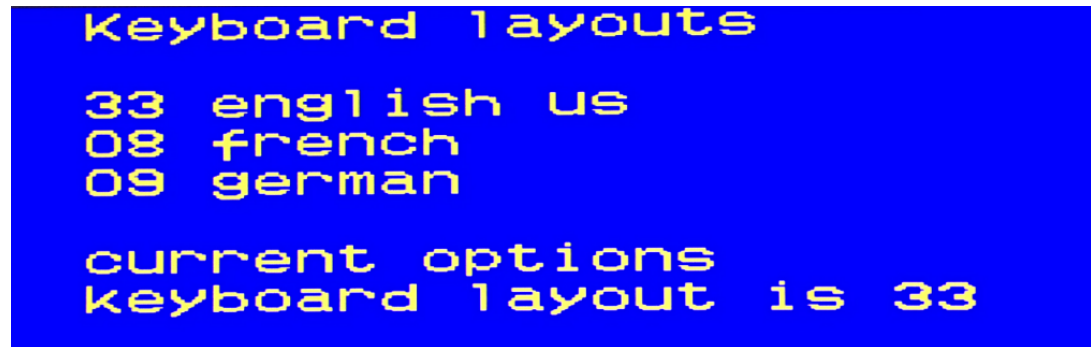
#	Hotkey Command	Function	Description
1	Hotkey > Hotkey > Hotkey	Enter OSD	Press the hotkey three times to trigger the OSD. With the default hotkey "Scroll Lock", you should press: Scroll Lock > Scroll Lock > Scroll Lock
2	Hotkey > Hotkey > N + Enter	Access Channel N	Press 'Hotkey' twice, then the channel number, and press Enter. For example, to access channel 3, press the following keys: Scroll Lock > Scroll Lock > 3 > Enter
3	Hotkey > Hotkey > C > Enter See Video Adjustment (on page 20)	Adjust a Channel Video of First-tier MCD-DUAL	Press the hotkey twice, then the letter "C" and finally press Enter. With the default hotkey "Scroll Lock", you should press: Scroll Lock > Scroll Lock > C > Enter
4	Hotkey > Hotkey > D > Enter See Video Adjustment (on page 20)	Adjust a Channel Video of Second-tier MCD-DUAL	Press the hotkey twice, then the letter "D" and finally press Enter. With the default hotkey "Scroll Lock", you should press: Scroll Lock > Scroll Lock > D > Enter
5	Hotkey > Hotkey > H > Enter See Borderless Mouse Switching (on page 21)	Mouse Cursor Calibration	<ul style="list-style-type: none"> ▪ Make sure Borderless Mouse Switching is on. ▪ Press the hotkey twice, then the letter "H" and finally press Enter. ▪ With the default hotkey "Scroll Lock", you should press: Scroll Lock > Scroll Lock > H > Enter
6	Ctrl > Ctrl	Access the next or prior "active" channel	<ul style="list-style-type: none"> ▪ Make sure there is no OSD shown onscreen. ▪ To select the next "active" channel, press the RIGHT 'Ctrl' key twice. Ctrl > Ctrl ▪ To select the prior "active" channel, press the LEFT 'Ctrl' key twice. Ctrl > Ctrl
7	Ctrl + Shift + F10 + Enter See Resetting to Factory Defaults (on page 33)	Resetting to Factory Defaults	<ul style="list-style-type: none"> ▪ Press F4 to log out and show the Login screen. ▪ Press Ctrl + Shift + F10 then press Enter to proceed with the factory reset.
8	Ctrl + F1 See Login Screen (on page 14)	Modify Keyboard Language Layout	<ul style="list-style-type: none"> ▪ Press F4 to log out and show the Login screen. ▪ Press Ctrl + F1 to modify the keyboard language layout. (EN33,FR08,GR09) ▪ Press the language number, then the "ESC" to finish the setting. For example, to choose English Keyboard, press the following keys: 33 > ESC

Chapter 4 On-Screen Display Interface

After turning on the device, the login screen displays. For initial login, use the built-in administrator account and password. You CANNOT remove the built-in administrator and user accounts, but you can change their passwords or rename any user accounts. Only the administrator can rename user accounts or change passwords.

- Administrator Account:
Default name: admin
Default password: raritan
- User Accounts: Default names: user001 through user015; Default passwords are NOT available.

Note: Before logging into the OSD, set your keyboard language layout.



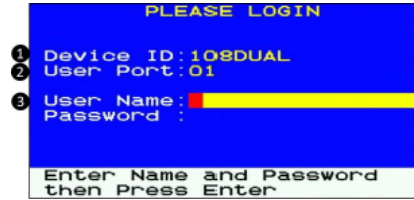
1. Press Ctrl + F1 to modify the keyboard language layout. (33: English US, 08: French, 09: German)
2. Press the language number, then the "ESC" to finish the setting.
For example, to choose "English US" Keyboard, press the following keys:
33 > ESC

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Login Screen

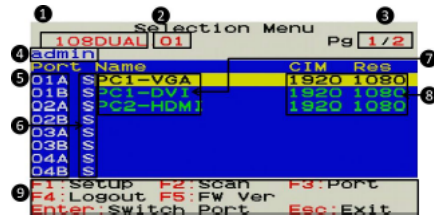
After turning on the device, the login screen displays. For initial login, use the built-in administrator account and password.



1	Device ID	The model name of your device.
2	User Port	The ID number of your console
3	User Name (16 Characters Long) Password (8 Characters Long)	The fields for entering user credentials. The user name and password can consist of any of combination letters and numbers.

Selection Menu

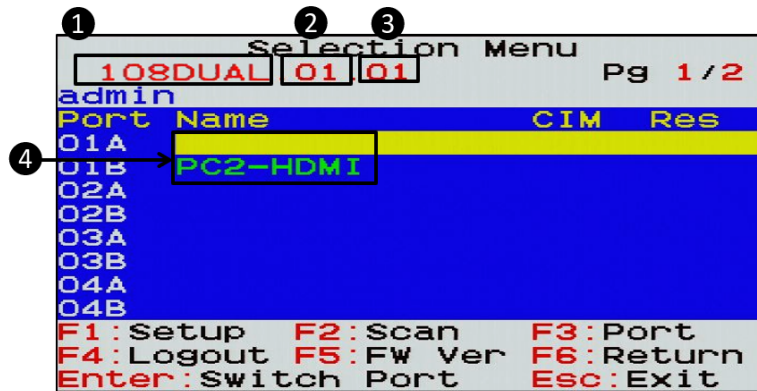
After the successful login, the Selection Menu displays.



▪ 1	Model Name	Your MCD-DUAL's model name
▪ 2	Selected Channel	The number of the channel that is being accessed
▪ 3	Page Information	The current page number and total pages
▪ 4	Login ID	The currently used login ID
▪ 5	Channel Numbers	Channel numbers of current page
▪ 6	Borderless Mouse Switching Status	When the function is enabled, the letter "S" will appear. You can press the S key on the keyboard to switch this function.
▪ 7	Channel Names	Available channel names of current page. The channel connected with a 2nd-tier MCD-DUAL will be marked with the symbol "+".
▪ 8	CIM Resolution	The current resolution setting of MDCIM or MDUTP
▪ 9	Operation Keys	Frequently-used keys for operating the current OSD

2nd-tier Selection Menu

After selecting any channel with a 2nd-tier MCD-DUAL connected, the Selection Menu of that switch appears.



▪ 1	Model Name	Your 1st-tier MCD-DUAL's model name
▪ 2	1st-tier Channel	The channel number of the 1st-tier MCD-DUAL where the 2nd-tier MCD-DUAL is connected
▪ 3	Selected 2nd-tier Channel	The channel number of the 2nd-tier MCD-DUAL that is being accessed
▪ 4	2nd-tier Channel Names	2nd-tier channel names

Setup

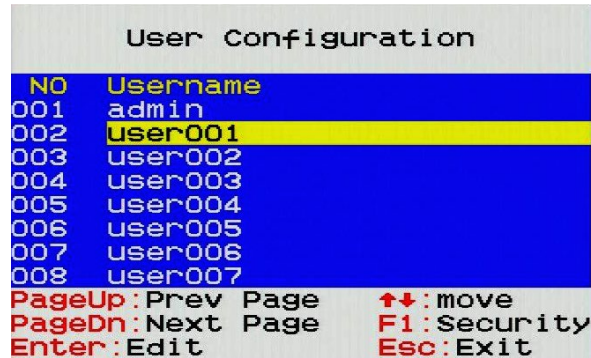
On the Selection Menu, press F1. The SETUP Menu displays.

```
          SETUP
PSSL: High
Mouse Switch: ON
Scan Mode: All
Scan Time: 005Seconds
ID Display: 010Seconds
Position: Menu
          ID
Hotkey: Scroll Lock
Buzzer: ON
Audio: OFF
↑↓: Select      F5: User Config
←→: Change Settings
Esc: Save and Return
```

Field	Options/Values	Function
PSSL	High/ Middle / Low	PSSL: Adjust the sensitivity level of borderless mouse switching.
Mouse Switch	ON or OFF	Turn on or off the borderless mouse switching function of the MCD-DUAL switch.
Scan Mode	All, or PC ON	This determines which servers will be scanned after activating the channel scan function. <ul style="list-style-type: none"> ▪ All: All channels are scanned. ▪ PC ON: Only active channels are scanned.
Scan Time	5 to 255 seconds (at an interval of 5 seconds)	This determines how long each channel's video is displayed during the channel scan.
ID Display	5 to 25 seconds, or ALL	This determines how long each channel's ID appears onscreen after selecting any channel.
Position	Menu, or ID	Select Menu or ID in order to adjust its position on the screen. -Menu: Main OSD pages, such as Selection Menu and the login screen. -ID: Channel ID.
Hotkey	Scroll Lock, Caps Lock, or Num Lock	This determines the hot key used for: -Triggering the OSD. -Selecting a channel when the OSD is not shown.
Buzzer	ON or OFF	Turn on or off the buzzer of the MCD-DUAL switch.
Audio	ON or OFF	Turn on or off the Audio Function of the MCD-DUAL switch.

User Configuration

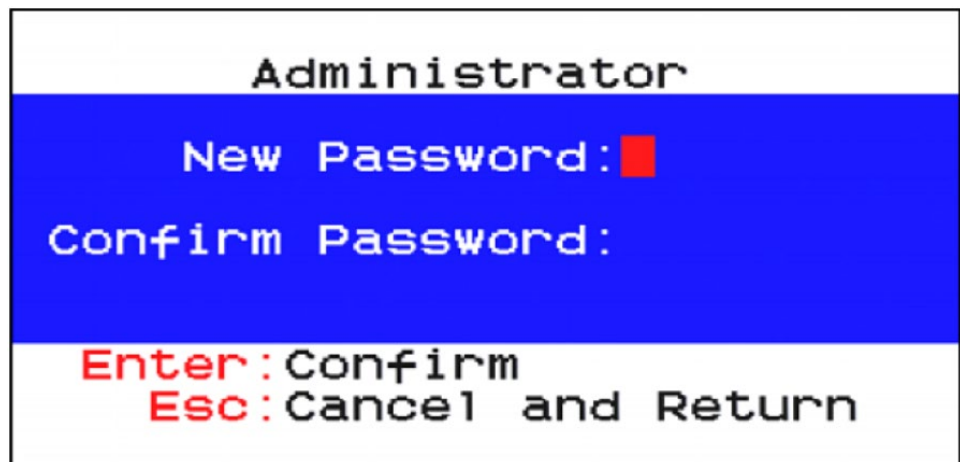
On the SETUP Menu, press F5. The User Configuration Menu displays. MCD-DUAL provides one administrator and 15 user accounts.



- **Note:** Operation Key "F1" is not available to setup admin's Port Access right.
- Press **↑** or **↓** to select the desired user. Press Page Up or Page Down if the desired user is not shown on the current page.
- Press Enter, and that user's password change page displays. Then follow either procedure below.
- After finishing the user accounts changes, press Esc to exit the User Configuration page.

► **To change the administrator's password**

1. In the New Password field, type the new password, and press Enter. A password comprises up to 8 characters.
2. Re-type the password and press Enter. To abort the changes, press Esc instead.



Important: It is strongly recommended to change the admin password. Make a note of it and keep it in a secure place. If you forget the password, contact the local dealer for RMA service.

► **To rename a user account and/or change the password:**

1. To rename it, type the new name in the User Name field, and press Enter. The name can comprise up to 16 characters. To keep the user name unchanged, simply press Enter without typing any characters.
2. In the New Password field, type the new password, and press Enter. A password comprises up to 8 characters.
3. Re-type the password, and press Enter. To abort the changes, press Esc instead.

```

User Name: User001
New Password:
Confirm Password:

Enter: Confirm
Esc: Cancel and Return
  
```

Important: It is recommended to note down all user names and passwords, and keep the data in a secure location.

Port Access Setup

On the User Configuration Menu, press F1. The User Port Access Setup Menu displays.

```

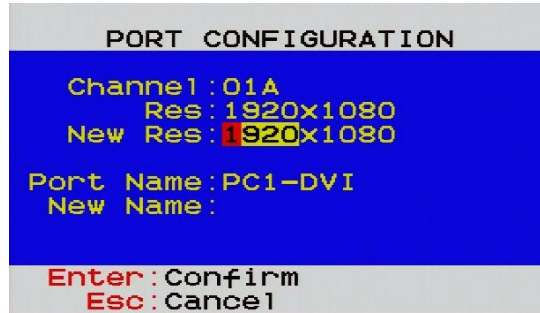
Port Access Setup
108DUAL. Pg 1 / 1
user001
Access Port
[M] 001
[M] 002
[M] 003
[M] 004
[M] 005
[M] 006
[M] 007
[M] 008
←→: Access Change ↑↓: move
ENTER: Tier2 Esc: Exit
  
```

Viewing Firmware Version

Press F5 on the Selection Menu page. The firmware information displays.

Port Configuration

On the Selection Menu, press F3. The Port Configuration Menu displays.



Note: Before enabling borderless mouse switching, you must set the port's resolution the same as the corresponding computer video output.

Video Adjustment

You can adjust the brightness and contrast of the channel that is being accessed.

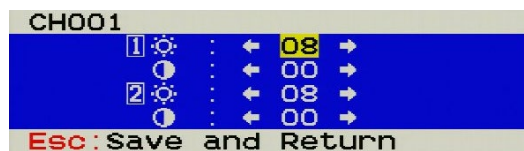
1. Select the desired channel to have its video shown on the screen.
2. Press the hot key twice, then the letter "C" or "D" and finally press Enter.

For example, with the default hot key "Scroll Lock", press:

- **Scroll Lock > Scroll Lock > C > Enter** (Adjust a Channel Video of First-tier MCD-DUAL)
- **Scroll Lock > Scroll Lock > D > Enter** (Adjust a Channel Video of Second-tier MCD-DUAL)

3. The following video properties appear onscreen.

- Press **↑** or **↓** to select the brightness or contrast.
- Press **←** or **→** to adjust the value of brightness or contrast.



Chapter 5 Borderless Mouse Switching

The function is for channel switching by the mouse cursor hitting the left or right edge of display borders, and then the MCD-DUAL will switch to prior or next channel.

Note1: Default setting is OFF. Borderless mouse switching is only available for 1st-tier computers.

Note2: Once the computer is powered back on from Hibernate Mode or reset the port's resolution, you have to calibrate the mouse cursor again by pressing Hotkey > Hotkey > H > Enter.

In This Chapter

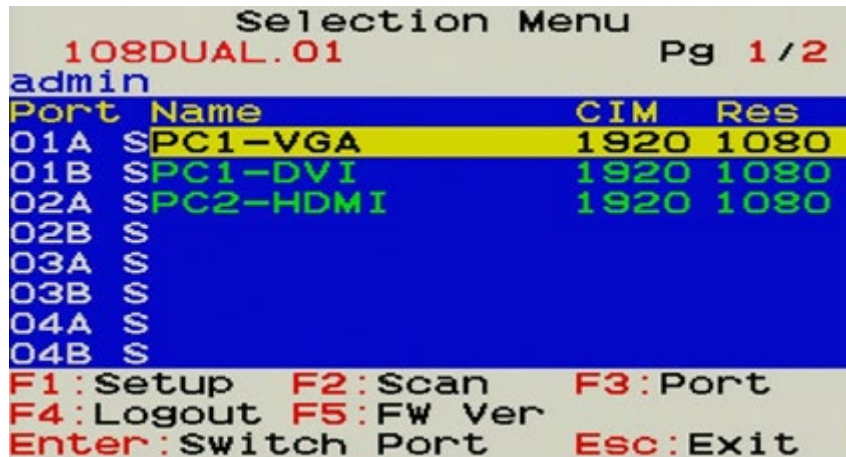
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Setup

Before enabling this function, you must do the following 1 setting on the MCD-DUAL and 3 settings on your computer.

► **Port Configuration:**

1. Press the hotkey three times to trigger the OSD.
2. On the Selection Menu, press F3. The Port Configuration Menu displays.



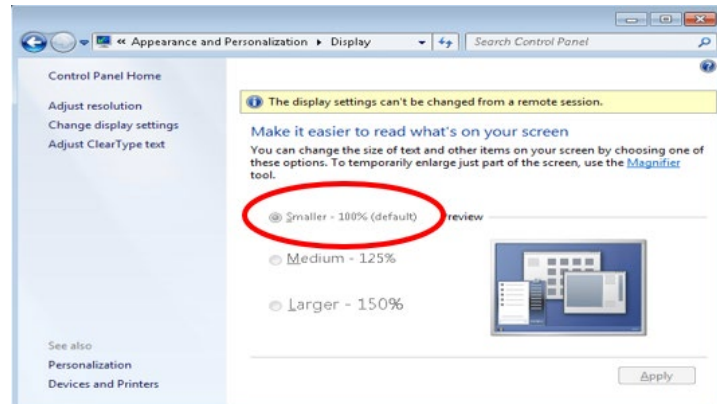
3. Set the port's new resolution as same as the corresponding computer video output.



4. Calibrate the mouse cursor after each port's resolution reset by pressing **Hotkey > Hotkey > H > Enter**.

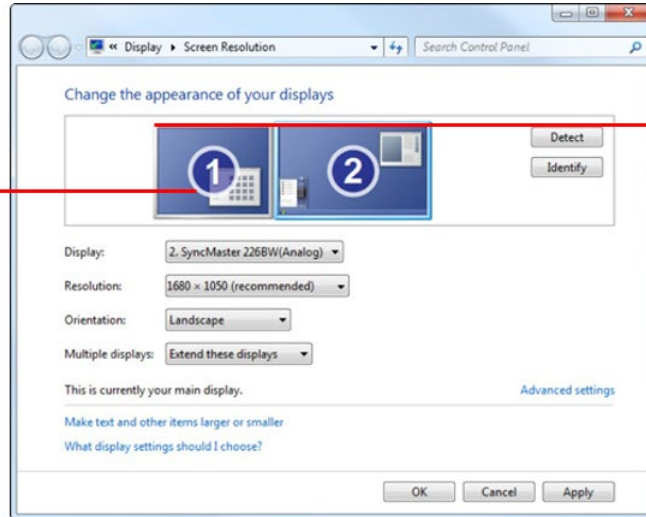
► **In the Display Settings:**

1. Change Display Setting to "Smaller - 100%"



2. Choose “Adjust Resolution”, then drag the primary monitor icon to the left and make sure the corresponding video output is connected to the “RJ45 Port A”. Finally align these two monitor icons to the top.

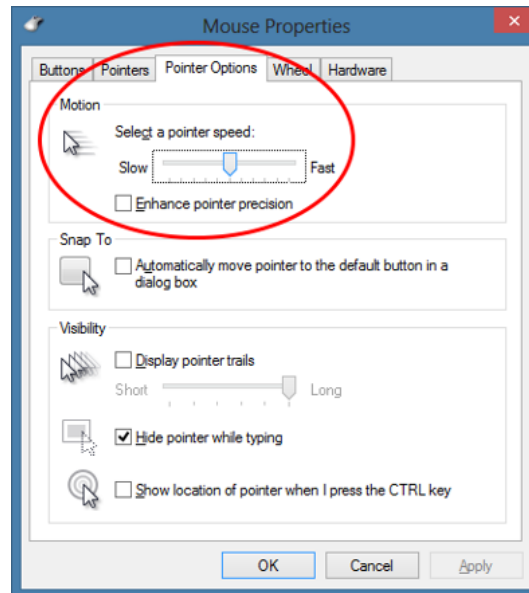
This monitor is connected to the “RJ45 Port A”



Align two monitor icons to the top

► **In Mouse Settings:**

1. Adjust Pointer Speed in the middle value to and turn off Enhance Pointer Precision.



Enable Borderless Mouse Switching

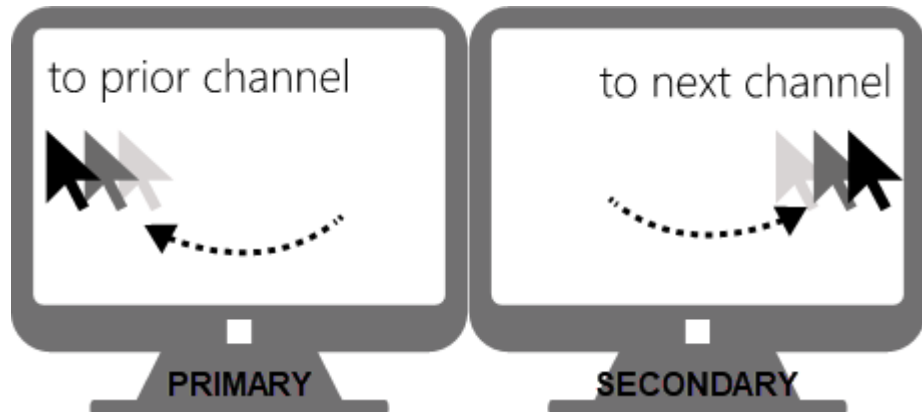
1. Login as administrator in the MCD-DUAL OSD.
(*Only administrator can turn ON/OFF Borderless Mouse Switching.)

2. On the Selection Menu, press F1, then the SETUP Menu displays.
3. Turn on borderless mouse switching.



Using Mouse Switching

1. Move the mouse cursor hitting the left of monitor border, and then the MCD-DUAL will switch to prior channel.
2. Move the mouse cursor hitting the right side of monitor border, and then the MCD-DUAL will switch to next channel.
3. Monitor A on the MCD-DUAL should be connected to the primary monitor and Monitor B on the MCD-DUAL should be connected to the secondary monitor.



Chapter 6 KVM Extension

The Cat5 Reach DVI HD KVM extender can locate the user up to 330 feet (100 meters) apart from a PC/server and KVM switch. There are two types of Cat5 Reach DVI HD devices: one is the transmitter (C5R-DVI-HD-TX), and the other is the receiver (C5R-DVI-HD-RX).

This chapter explains how to connect the Cat5 Reach DVI HD as console or server extensions for the MCD-DUAL.

In This Chapter

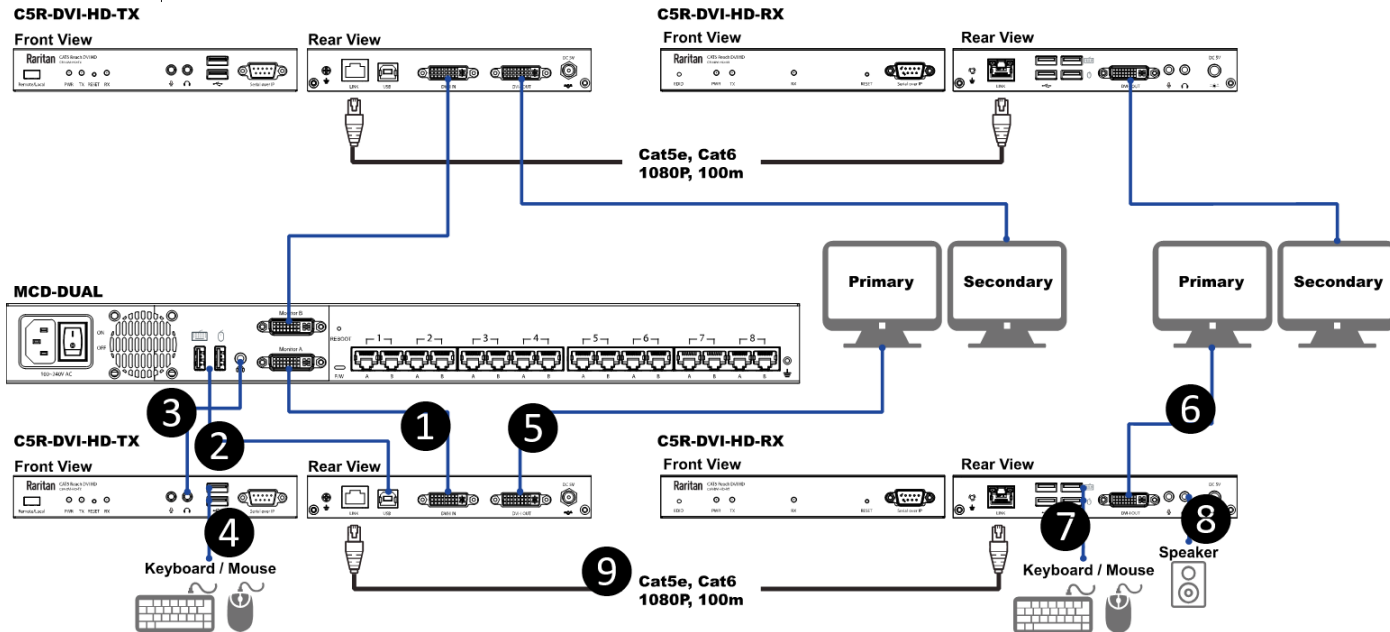
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Console Extension

► Primary Monitor Connection

1. Use a DVI cable to connect the DVI port (Monitor A) of the MCD-DUAL and DVI-IN port of the first C5R-DVI-HD-TX.
2. Use a USB type A-B cable to connect either USB mouse or keyboard port of the MCD-DUAL and the USB port of the first C5R-DVI-HD-TX.
3. Connect the speaker port of the MCD-DUAL and the speaker port of the first C5R-DVI-HD-TX with an audio cable
4. Plug a USB keyboard and a USB mouse into the USB ports of the first C5R-DVI-HD-TX.
5. Plug the primary DVI monitor (for local console) into the DVI-OUT port of the first C5R-DVI-HD-TX.
6. Connect the primary DVI monitor (for remote console) to the DVI-OUT port of the first C5R-DVI-HD- RX.
7. Plug a USB keyboard and a USB mouse into the USB ports of the first C5R-DVI-HD-RX.
8. Plug a speaker into the USB port of the first C5R-DVI-HD-RX.

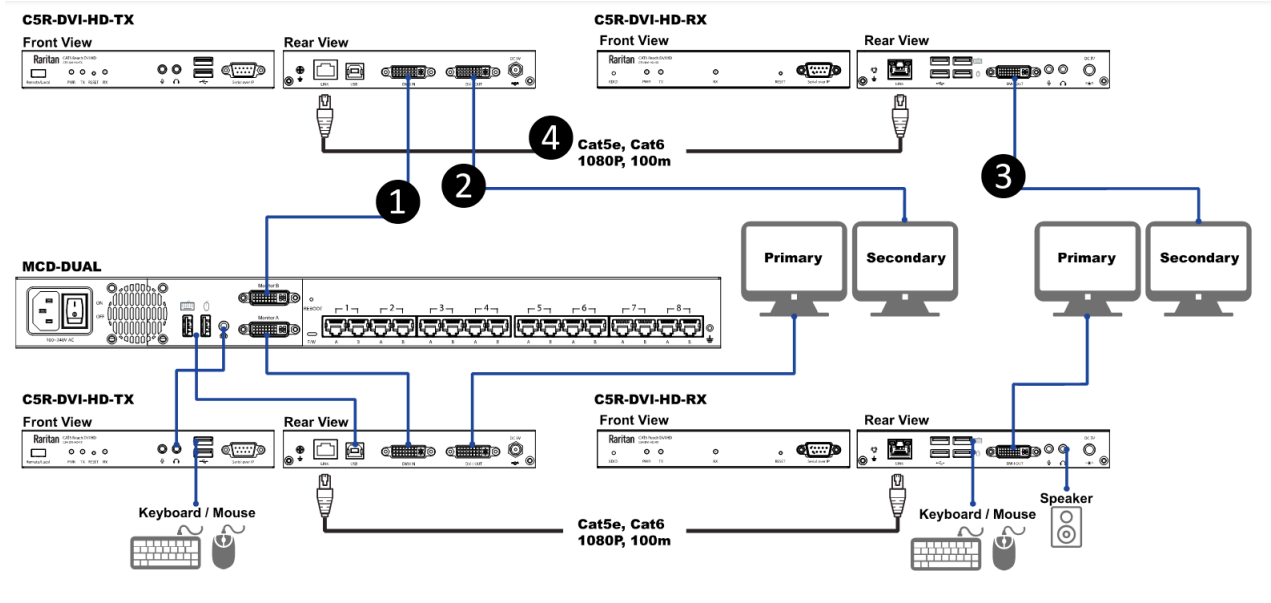
- Use a Cat5e/6 cables up to 330 feet (100 meters) long to connect the transmitter and receiver. Plug either end of the cable into the RJ-45 LINK ports.



► **Secondary Monitor Connection**

- Use a DVI cable to connect the DVI port (Monitor B) of the MCD-DUAL and DVI-IN port of the second C5R-DVI-HD-TX.
- Plug the secondary DVI monitor (for local console) into the DVI-OUT port of the second C5R-DVI-HD-TX.
- Connect the secondary DVI monitor (for remote console) to the DVI-OUT port of the second C5R-DVI-HD-RX.

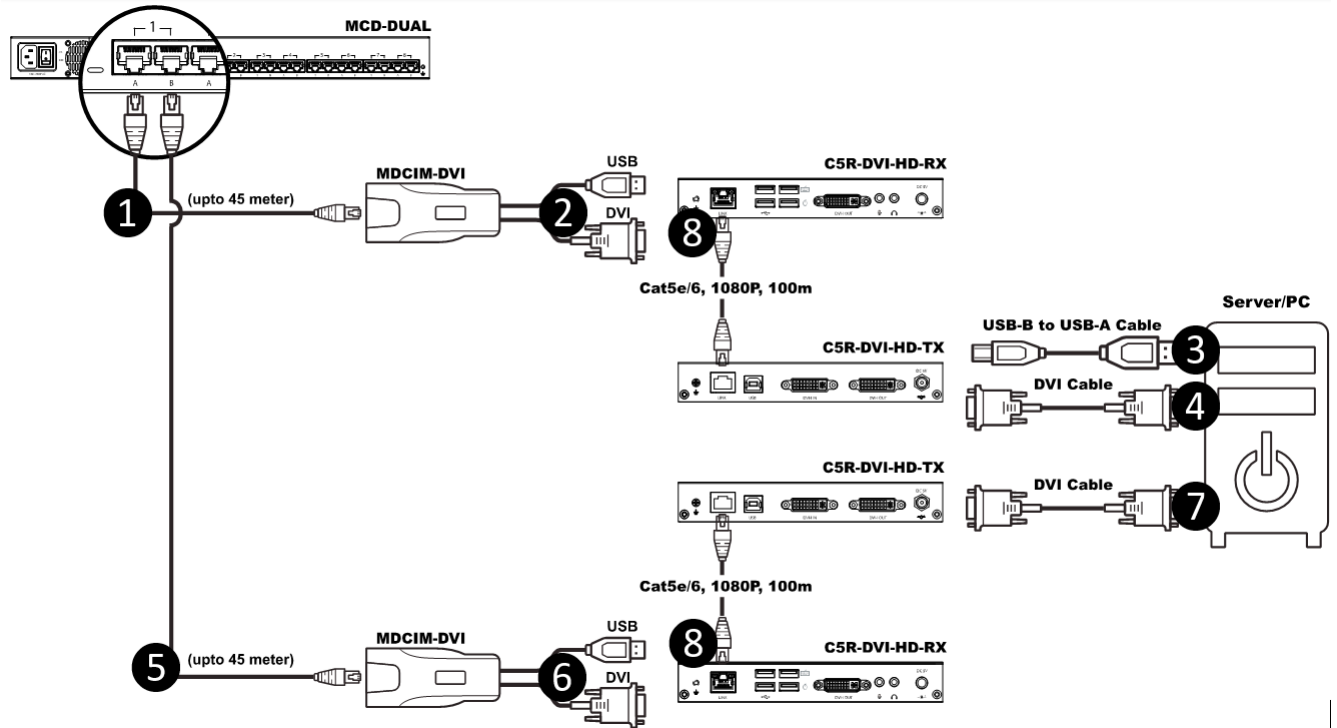
4. Use a Cat5e/6 cables up to 330 feet (100 meters) long to connect the transmitter and receiver. Plug either end of the cable into the RJ-45 LINK ports.



PC/Server Extension

1. Primary Video Output Connection:
 - a. Connect the first MDCIM-DVI to the "RJ45 Port A" of MCD-DUAL by using a standard network patch cable (Cat5e/6 UTP).
 - b. Plug the first MDCIM-DVI's USB and DVI connectors into the USB and DVI ports of the first C5R-DVI-HD-RX.
 - c. Connect the USB ports of the PC/server and the first C5R-DVI-HD-TX with a USB type A-B cable.
 - d. Use a DVI cable to connect the DVI port of the first C5R-DVI-HD-TX and primary DVI output port of the PC/server.
2. Secondary Video Output Connection:
 - a. Connect the second MDCIM-DVI to the "RJ45 Port B" of MCD-DUAL by using a standard network patch cable (Cat5e/6 UTP).
 - b. Plug the second MDCIM-DVI's DVI connector into the DVI port of the second C5R-DVI-HD-RX.
 - c. Use a DVI cable to connect the DVI port of the second C5R-DVI-HD-TX and secondary DVI output port of the PC/server.

- d. Use Cat5e/6 cables up to 330 feet (100 meters) long to connect the transmitters and receivers. Plug either end of the cable into the RJ-45 LINK ports.



Chapter 7 Maintenance

In This Chapter

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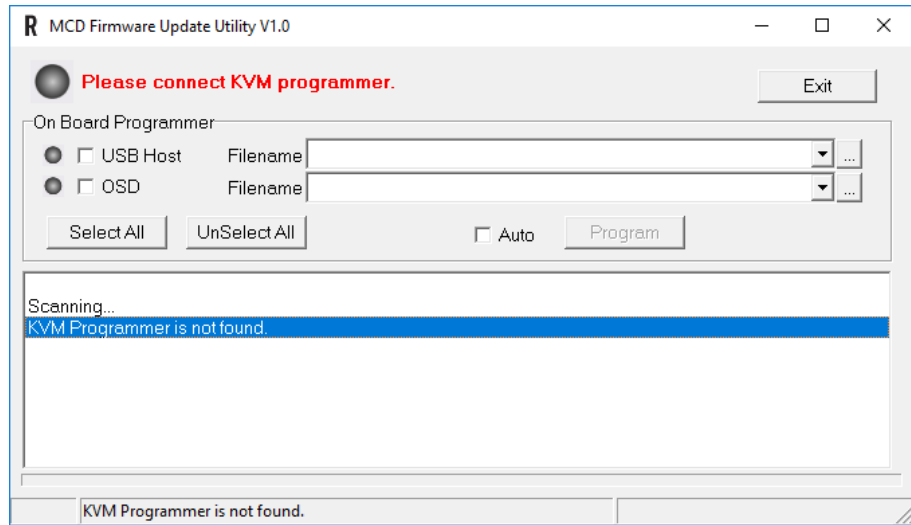
Firmware Upgrade Procedures

The KVM switch provides the firmware upgrade for the following functions:

- USB Host: Update for USB host chip on KVM switch. The firmware filename for USB Host is MCD_USB_HOST_XXX.usb.
- OSD: Update for on-screen-display functions. The firmware filename for OSD is MCD_OSD_XXX.osd.

► **To update the firmware:**

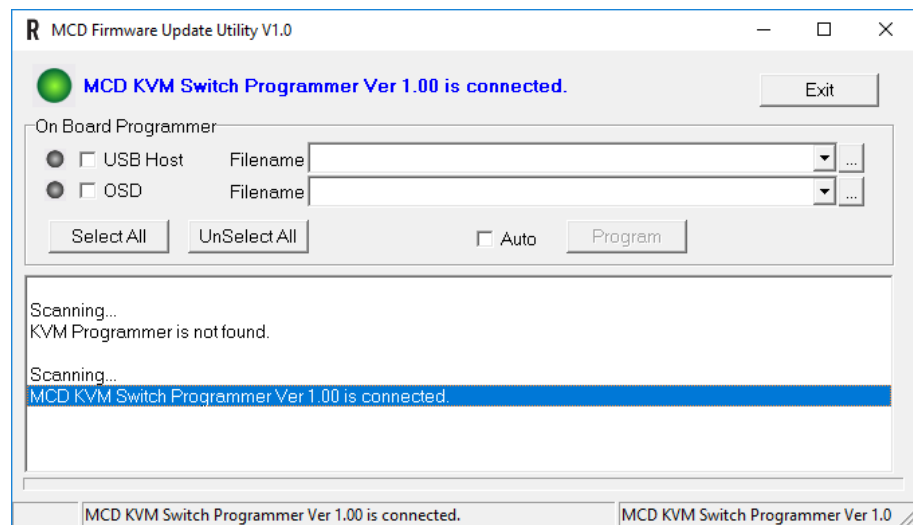
1. Disconnect all the KVM cable between KVM and computer.
2. Disconnect all the keyboard and mouse plugged on KVM.
3. Disconnect the cable between KVM and monitor.
4. Apply AC power cord to the KVM.
5. Execute the firmware update utility "Prog.EXE".



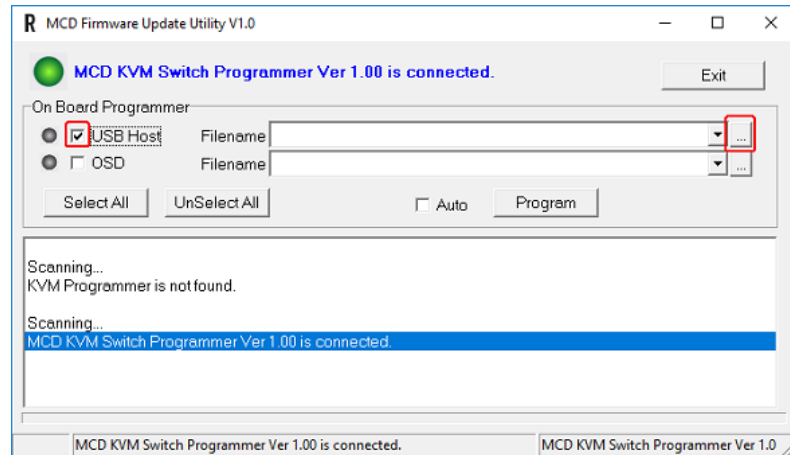
6. Use the micro-USB cable to connect KVM firmware update port and the USB port of computer which runs the firmware update utility.



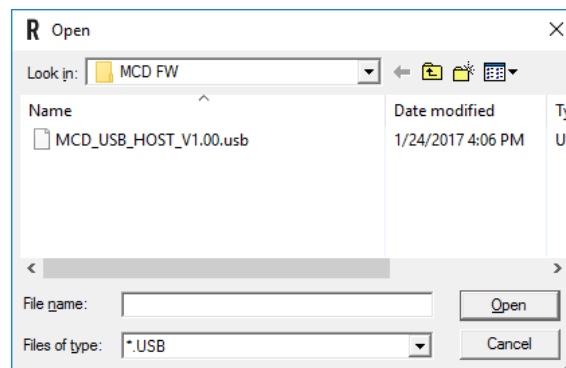
7. The utility will scan the KVM programmer automatically.



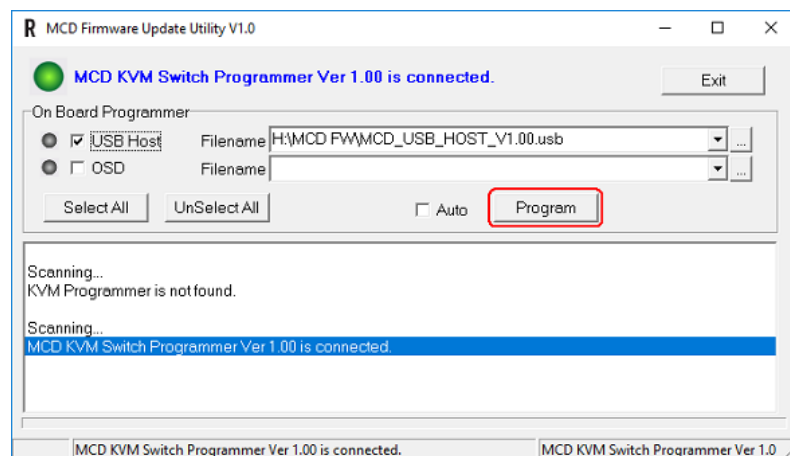
8. Select the target by enabling the check box, for example "USB Host", and click the file browsing button to select the firmware file to update.



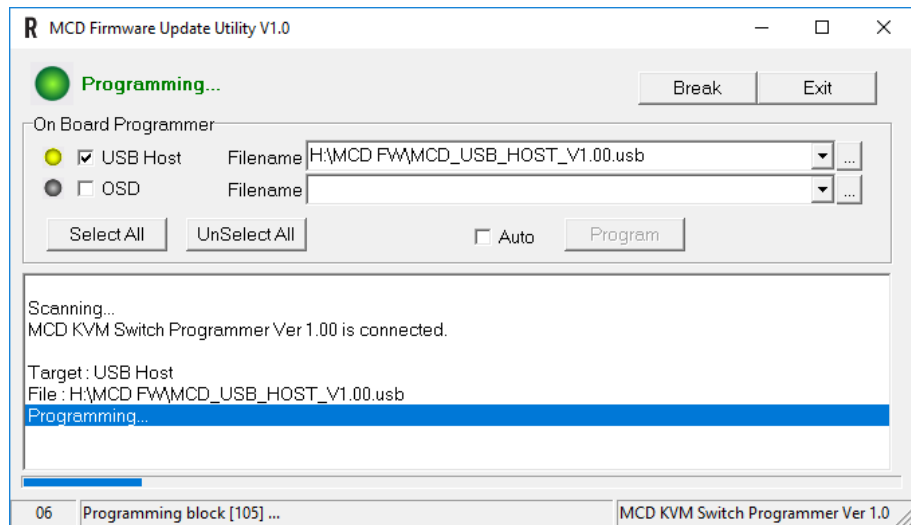
9. Select the firmware file to update.



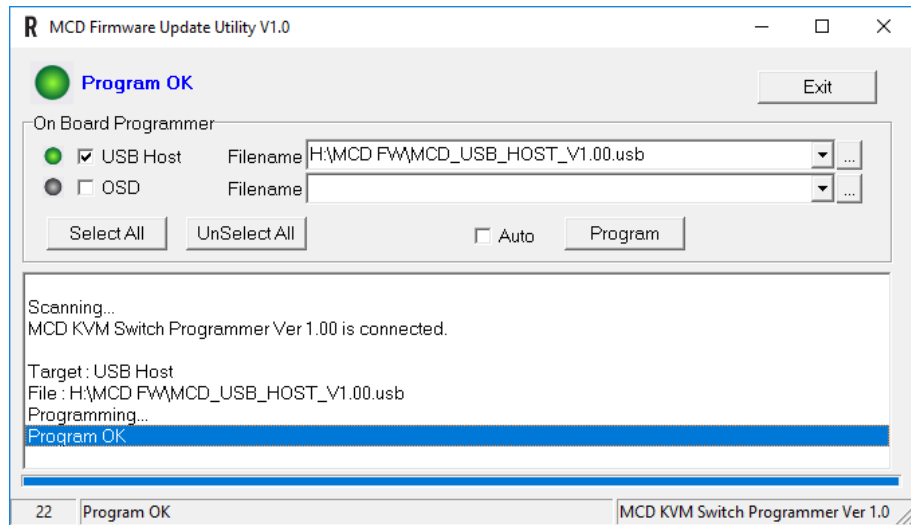
10. Click the "Program" button to start firmware programming.



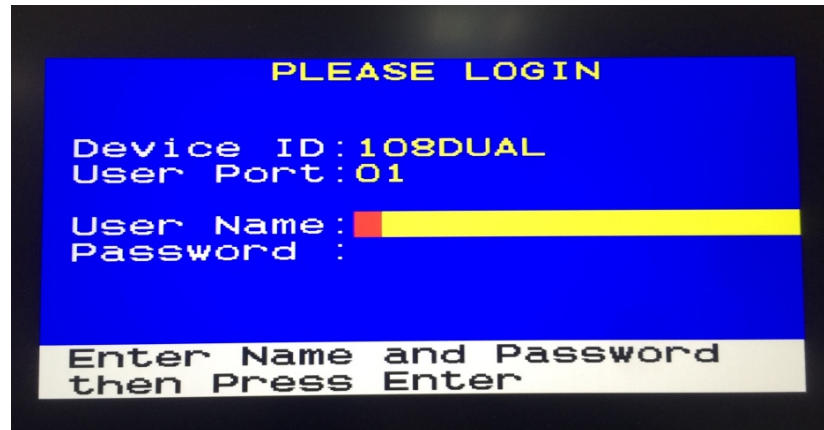
11. A status bar is shown under the panel to indicate the update progress.



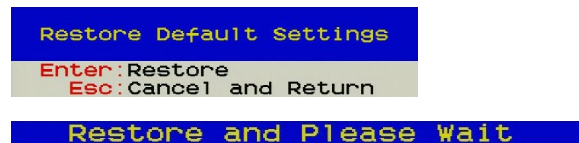
12. The firmware is updated successfully.



- After updating, you must restore the device. Power on the device, then press "Ctrl+Shift+F10" before log-in

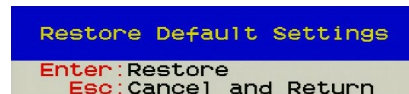


- Press "Enter" to restore the device.



Resetting to Factory Defaults

- Press F4 to log out and show the Login screen.
- Press Ctrl + Shift + F10. The following message appears.



- Press Enter to proceed with the factory reset. The following message appears. Wait until the Login screen re-appears, indicating the reset is completed.



Appendix A Frequently Asked Questions (FAQs)

MASTERCONSOLE® DIGITAL DUAL KVM Switch

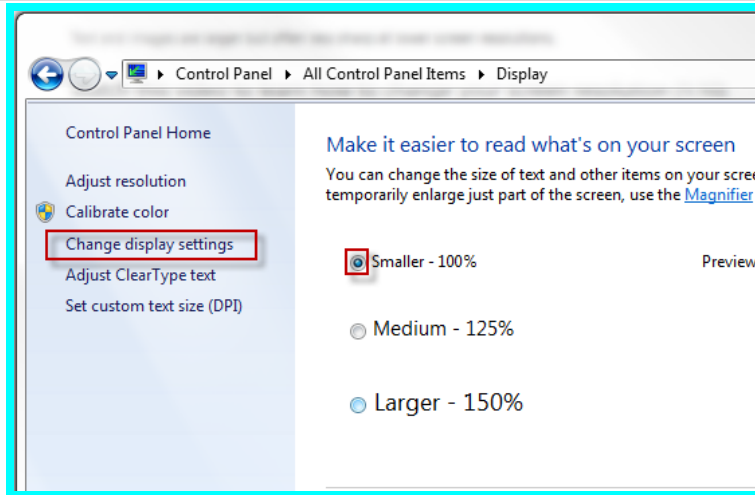


Question	Answer
<p>What is the MasterConsole Digital-DUAL KVM switch (MCD-Dual)?</p>	<p>Raritan's MasterConsole® Digital– DUAL KVM switch (MCD-Dual) consolidates access and control of multiple dual-head servers with a single console supporting dual displays.</p> <p>It features KVM ports for 4 or 8 "dual-headed" servers (MCD-104-DUAL/ MCD-108-DUAL). Switches can be cascaded into two levels to support up to 64 connections. MCD switches use standard Category 5/6/6e unshielded twisted pair (UTP) cables for connecting computers.</p> <p>MCD-Dual KVM switches support the latest digital video user interfaces — DVI, HDMI, and DP video inputs. Maximum video resolution is supported up to 1920x1200 @60Hz (via MDUTP cables), 1920x1080 @60Hz (via MDCIMs) in 150 feet through UTP cable.</p> <p>MCD-Dual KVM switches provide a friendly OSD (On-Screen Display) interface and hotkeys to access connected computers and the convenient borderless mouse switching feature.</p>
<p>What is the "Borderless Mouse Switching" function?</p>	<p>This function is for port selection. If you move the mouse cursor to the left or right side of the display's borders, then MCD-DUAL will switch to the prior or next port.</p> <p>The user can move the mouse to strike the monitor's edge, and then the mouse will move to the next port.</p>
<p>What is the size of the MasterConsole Digital-DUAL?</p>	<p>The MCD-DUAL is only 1U in height and fits in a standard 19" rack.</p>

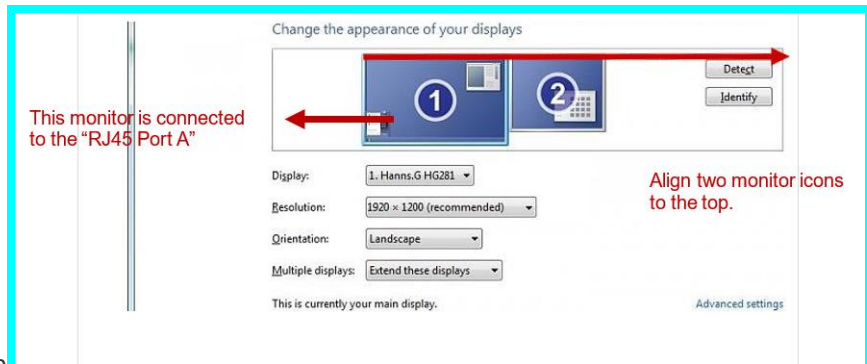
Question	Answer
What interfaces does the MasterConsole Digital-DUAL support?	The Computer Interface Modules supports multiple video interfaces via CIM (MDCIM-DVI/HDMI/DP) & UTP VGA cables.
How to extend the user console of MasterConsole Digital-DUAL?	You can connect MasterConsole Digital-Dual's user console through Raritan's Cat5 Reach DVI HD to extend the user console up to 500 feet with 1080P video resolution. You will need two sets of Cat5 Reach DVI HD on the user console video ports to support the dual display function. This is beneficial to anyone who would like "lights-out" access to the server room with a dual monitor display.
How to support audio on MasterConsole Digital-DUAL?	You can connect an earphone or a speaker to the 3.5mm audio jack on the MasterConsole Digital-dual's user console. Connect the MDCIM-HDMI to the server to access.
What types of servers does MasterConsole Digital-DUAL?	MS-DOS, Windows® 7/8/8.1/10, Linux®, Macintosh® OS9, OSX, and SCO UNIX®. Mac OS.
Can Dominion® CIMs, MCIMs, or MCUTP cables work with MasterConsole Digital-DUAL?	No, these accessories are not compatible with the MCD-dual.
Does MasterConsole Digital-DUAL support USB keyboards with USB hub function such as Sun type 7 keyboard or Mac wired keyboard?	No, MCD-Dual does not support USB keyboards with USB hub functions.
How to setup the borderless mouse switching function?	Default setting: Disabled and only available for computers connecting to 1st-tier MCD-DUAL. Once the computer is powered back on from Hibernate Mode, you must calibrate the mouse cursor by pressing "Scroll Lock > Scroll Lock > H > Enter."
How to setup the borderless mouse switching function? (on target Windows PC)	In the Windows Display Settings: <ul style="list-style-type: none"> ▪ Change Display Setting to "Smaller - 100%."

Question

Answer

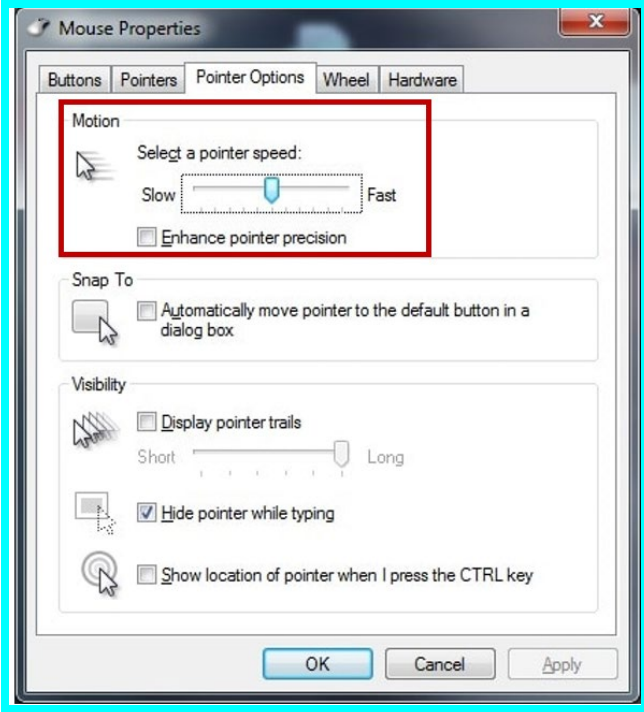


Choose "Adjust Resolution." Drag the primary monitor icon to the left and make sure the corresponding video output is connected to the "RJ45 Port A". Finally, align these two monitor icons to the



top

- In Mouse Settings, Adjust Pointer Speed in the middle value to and turn off Enhance Pointer Precision.

Question	Answer
	
<p>Does the MasterConsole Digital DUAL come with 19" mounting brackets?</p>	<p>Yes, Rackmount Kit x 1 (brackets and associated screws) is included.</p>
<p>Is the borderless mouse switching set-able, not merely left/right, but also up/down in case of a stacked monitor setup?</p>	<p>Mouse borderless switching is not set for vertical movement (up-down), only for horizontal movement (left-Right).</p>
<p>As this is an entry solution, do we support PS2 inputs as well?</p>	<p>No, only USB is supported.</p>
<p>Is switch supposed to be close to the end-user? So users need almost to put it on their desk?</p>	<p>No, you can use CAT5Reach DVI extenders to extend the user distance, also on the server side you can use the CAT5Reach DVI to extend the distance.</p>
<p>Switching while moving your mouse to the right/left, will this skip a server-channel that is switched OFF ?</p>	<p>Yes, the borderless mouse switching skips inactive channels, e.g. switch from computer 1 to computer 3 if computer 2 is disconnected.</p>

Question	Answer
Are the outputs on the device DVI-I or DVI-D, it's hard to tell on the photos.	DVI-I, also the switch comes with VGA adapters for converting from DVI-I to VGA.
Are USB to PS2 adapters supported for this platform?	They might work, but officially not supported.
Are C2G adapters for DP to miniDP etc, officially supported?	Normally these adapters should work
OSD languages, plans for Russian?	English, French and German, no plans for Russian.
Does MCD-DUAL support USB-C and/or provide an adapter ?	C2G USB-C-HDMI adapter used on the KX4-101 can support MCD-DUAL also.
Can we limit access to a port via a particular user/pass?	Yes, you can define this per user. User privileges allow one administrator to set different channel access rights to maximum of 15 user accounts

Supported VGA and DVI Resolutions of MCD-DUAL

VGA resolutions (analog)	DVI resolutions (digital)
640 x 480 @60/70/75Hz	640 x 480 @60/70/75Hz
720 x 400 @70Hz	---
720 x 576 @60Hz	---
848 x 480 @60Hz	---
800 x 600 @60/70/75Hz	800 x 600 @60/70/75Hz
1024 x 768 @60/70/75Hz	1024 x 768 @60/70/75Hz

VGA resolutions (analog)	DVI resolutions (digital)
1152 x 864 @60/70/75Hz	1152 x 864 @60/70/75Hz
1280 x 720 @60/70/75Hz	1280 x 720 @60/70/75Hz
---	1280 x 768 @60/75Hz
1280 x 800 @60/70/75Hz	1280 x 800 @60/75Hz
1280 x 960 @60/70/75Hz	1280 x 960 @60Hz
1280 x 1024 @60/70/75Hz	1280 x 1024 @60/75Hz
1360 x 768 @60Hz	1360 x 768 @60Hz
1440 x 900 @60Hz	---
---	1600 x 900 @60Hz
1680 x 1050 @60Hz	1680 x 1050 @60Hz
1920 x 1080 @60Hz	1920 x 1080 @60Hz
1920 x 1200 @60Hz	---

Appendix B Disclaimer

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FCC Statement

This device generates and uses radio frequency and may cause interference to radio and television reception if not installed and used properly. This has been tested and found to comply with the limits of a Class B computing device in accordance with the specifications in Part 15 of the FCC Rules. These specifications are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this device does cause harmful interference to radio or television reception, which can be determined by plugging the device in and out, the user can try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the device and receiver.
- Connect the computer into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CE / FCC



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