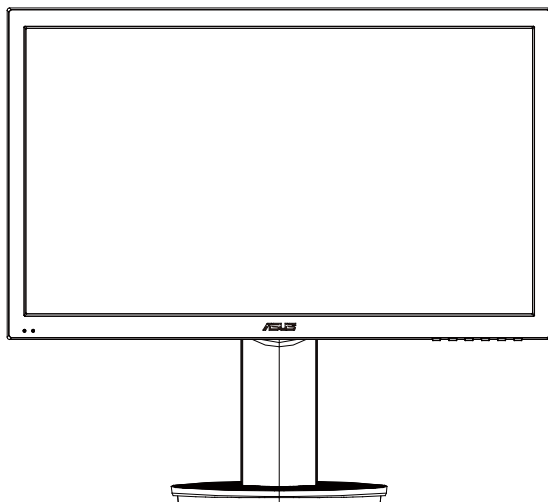




# CP220 / CP240 Series

## Zero client display

### User Guide



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# Notices

## Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with manufacturer's instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to 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.



As an Energy Star<sup>®</sup> Partner, our company has determined that this product meets the Energy Star<sup>®</sup> guidelines for energy efficiency.

## Canadian Department of Communications Statement

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

This class B digital apparatus complies with Canadian ICES-003.

Warning: This client complies with the EMC directive only when you use a shielded Ethernet cable.

# Safety information

## Use only the AC/DC adapter model: EXA1203YH

- Before setting up the display, carefully read all the documentation that came with the package.
- To prevent fire or shock hazard, never expose the display to rain or moisture.
- Never try to open the display cabinet. The dangerous high voltages inside the display may result in serious physical injury.
- If the power supply is broken, do not try to fix it by yourself. Contact a qualified service technician or your retailer.
- Before using the product, make sure all cables are correctly connected and the power cables are not damaged. If you detect any damage, contact your dealer immediately.
- Slots and openings on the back or top of the cabinet are provided for ventilation. Do not block these slots. Never place this product near or over a radiator or heat source unless proper ventilation is provided.
- The display should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supply to your home, consult your dealer or local power company.
- Use the appropriate power plug which complies with your local power standard.
- Do not overload power strips and extension cords. Overloading can result in fire or electric shock.
- Avoid dust, humidity, and temperature extremes. Do not place the display in any area where it may become wet. Place the display on a stable surface.
- Unplug the unit during a lightning storm or if it will not be used for a long period of time. This will protect the display from damage due to power surges.
- Never push objects or spill liquid of any kind into the slots on the display cabinet.
- To ensure satisfactory operation, use the display only with UL listed computers which have appropriate configured receptacles marked between 100 - 240V AC.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.
- If you encounter technical problems with the display, contact a qualified service technician or your retailer.

# Care and cleaning

- Before you lift or reposition your display, it is better to disconnect the cables and power cord. Follow the correct lifting techniques when positioning the display. When lifting or carrying the display, grasp the edges of the display. Do not lift the display by the stand or the cord.
- Cleaning. Turn your display off and unplug the power cord. Clean the display surface with a lint-free, non-abrasive cloth. Stubborn stains may be removed with a cloth dampened with mild cleaner.
- Avoid using a cleaner containing alcohol or acetone. Use a cleaner intended for use with the screen. Never spray cleaner directly on the screen, as it may drip inside the display and cause an electric shock.

## The following symptoms are normal with the display:

- The screen may flicker during the initial use due to the nature of the fluorescent light. Turn off the power switch and turn it on again to make sure that the flicker disappears.
- You may find slightly uneven brightness on the screen depending on the desktop pattern you use.
- When the same image is displayed for hours, an afterimage of the previous screen may remain after switching the image. The screen will recover slowly or you can turn off the power switch for hours.
- When the screen becomes black or flashes, or cannot work anymore, contact your dealer or service center to fix it. Do not try to repair the display by yourself!

## Conventions used in this guide



**WARNING:** Information to prevent injury to yourself when trying to complete a task.



**CAUTION:** Information to prevent damage to the components when trying to complete a task.



**IMPORTANT:** Information that you **MUST** follow to complete a task.



**NOTE:** Tips and additional information to aid in completing a task.

## **Where to find more information**

Refer to the following sources for additional information and for product and software updates.

### **1. ASUS websites**

The ASUS websites worldwide provide updated information on ASUS hardware and software products. Refer to <http://www.asus.com>

### **2. Optional documentation**

Your product package may include optional documentation that may have been added by your dealer. These documents are not part of the standard package.

## 1.1 Welcome

Thank you for purchasing the ASUS® display.

The latest display from ASUS provides a crisper, broader, and brighter screen, plus a host of features that enhance your viewing experience.

With these features, you can enjoy the convenience and delightful visual experience that the display brings you!

## 1.2 Package contents

Check your package for the following items:

- ✓ Display set
- ✓ Display base and screw
- ✓ Quick start guide
- ✓ Warranty card
- ✓ Power cord
- ✓ Adapter
- ✓ DVI Cable
- ✓ VGA Cable



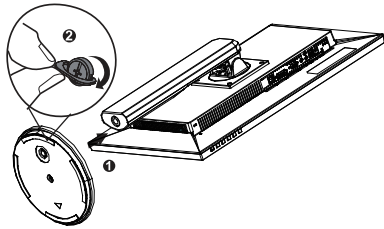
- 
- If any of the above items is damaged or missing, contact your retailer immediately..
-



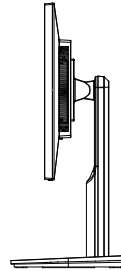
## 1.3 Assembling the base of the display

1. Attach the base to the arm and fix with the screw to join them tightly. You can easily tighten the screw by fingers.
2. Adjust the monitor to the angle that is most comfortable for you.

1



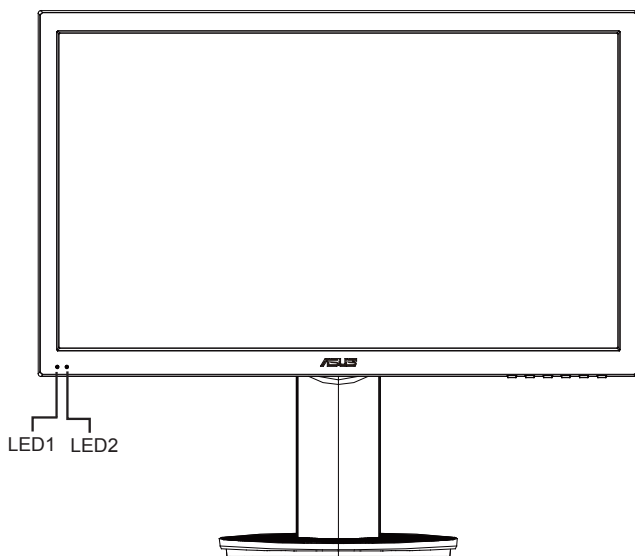
2



- 
- We recommend that you cover the table surface with soft cloth to prevent from damaging the display.
-

## 1.4 Display introduction

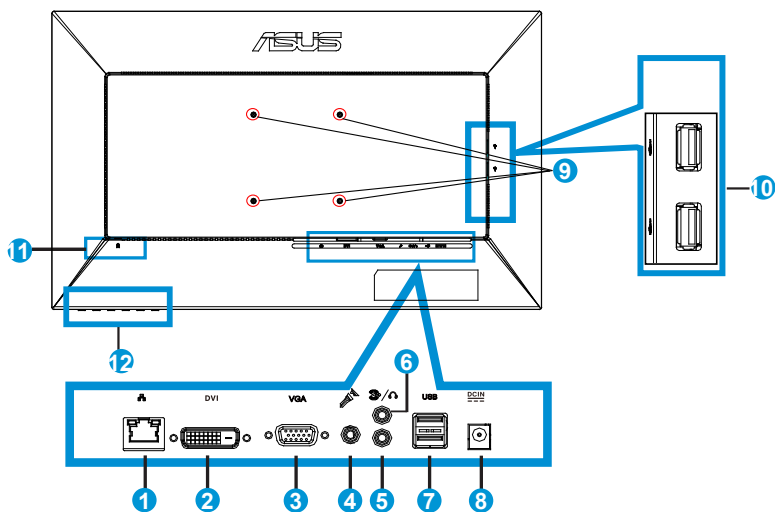
### 1.4.1 Front of the display



1. Client LED Indicator:
  - The color of client LED Indicator is as below.
2. Power Indicator:
  - The color of power indicator is as below.









	Status	description
LED1	White	client power on
LED1	Amber	Power Off and Wake On Lan/ Wake On USB
LED2	White	link to virtual desktop

## 1.4.2 Rear of the display



1. RJ45
2. DVI connector
3. VGA connector
4. Microphone input
5. audio-in jack
6. earphone-out
7. USB connector
8. Power-in jack
9. Screw holes of mounting interface
10. USB connector
11. Kensington lock
12. Control keypad

### 1.4.3 Get start with client system

Item	Key	Description
	Power	Press this button to turn on/off the monitor
	Input select	Press to select different input source
	Brightness & Up	brightness/press to increase the numerical value of selected function
	Menu	Press to enter OSD menu
	Volume & down	volume/press to decrease the numerical value of selected function
	Auto adjust & return	Auto Adjust/Return to previous selection
	Link(LED)	Link to server
	Client(LED)	LED in white while client is on
		LED in amber while client is off/wake-on-LAN or wake-on-USB is enabled

key	Source	Function	Description
*Auto Adjust & Return	VGA	Auto Adjustment	in VGA source(>2 seconds)
		Splendid mode switch	in VGA source for short press. (<2 seconds)
	Client	Instant connection	Press shortly under login UI(<2 seconds)
		Exit OSD, press shortly to select disconnection, turn off workstation or cancel	Press shortly under host session(<2 seconds)
		Disconnect and return to log in UI	Press shortly under server session(<2 seconds)

### 1.4.4 Client Indicator Behavior

Status	POWER	LINK	Client
Power On	White	Off	White
Power Off	Off	Off	Off
Power On and Link to Virtual Desktop	White	White	White
Power Off and Wake On Lan	Amber	Off	Amber
Power Off and Wake On USB	Amber	Off	Amber
Power On to Power Off and Wake On USB	White (Blink 12s then off)/ Amber(always on)	White(on for 12s then off)	White (Blink 12s then off) / Amber (always on)

## 2.1 Detaching the arm/stand (for wall mounting)

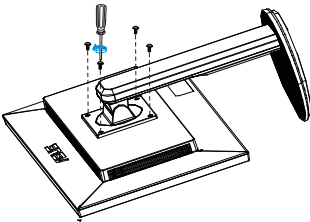
To detach the arm/stand.

1. Disconnect power and signal cables. Carefully put the front of the monitor face down on a clean table.
2. Use your fingers gently pull away the plate that covers the stand neck. Use a screwdriver to remove the four screws that secure the stand to the monitor.
3. Detach the stand from the monitor.

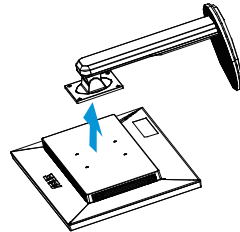


- We recommend that you cover the table surface with soft cloth to prevent from damaging the display.
- Hold the stand while removing the screws.

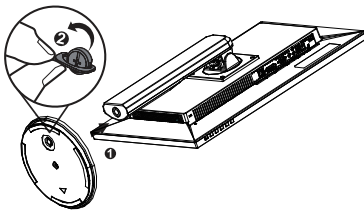
1



2



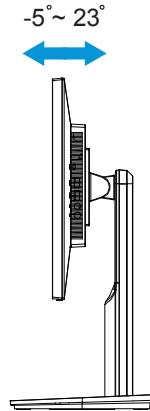
3



- The (100 x 100 mm) wall mount kit is not included in the product purchased.
- Use only the UL listed wall mount bracket with minimum weight/load 14kg (Screw size: M4 x 10 mm).

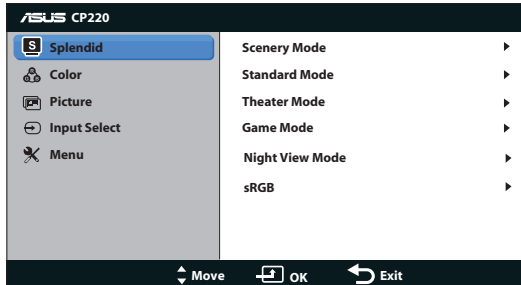
## 2.2 Adjusting the display

- For optimal viewing, we recommend that you look at the full face of the display, and then adjust the display to the angle that is the most comfortable to you.
- Hold the stand to prevent the display from falling while changing its angle.
- You may adjust the display's angle from  $-5^{\circ}$  to  $23^{\circ}$ .



## 3.1 OSD (On-Screen Display) menu

### 3.1.1 How to reconfigure

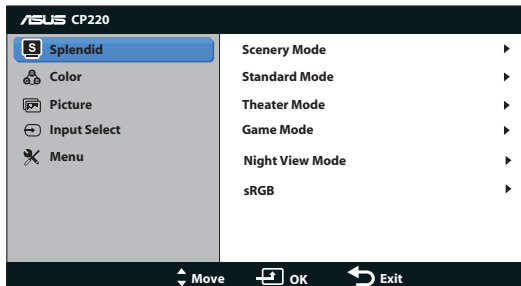


1. Press the MENU button to activate the OSD menu.
2. Press ▼ and ▲ button to navigate through the functions. Press the OK button to highlight and activate the desired function. If the selected function has a sub-menu, press ▼ and ▲ button again to navigate through the sub-menu. Press the OK button to highlight and activate the desired sub-menu function.
3. Press ▼ and ▲ button to change the settings of the selected function.
4. To exit from the OSD menu, press the MENU button. Repeat step 2 and step 3 to adjust any other function.

### 3.1.2 OSD Function Introduction

#### 1. Splendid

This function contains six sub-functions that you can select for your preference. Each mode has the Reset selection, allowing you to maintain your setting or return to the preset mode.



- **Scenery Mode:** This is the best choice for scenery photo displaying with SPLENDID™ Video Intelligence.
- **Standard Mode:** This is the best choice for document editing with SPLENDID™ Video Intelligence.

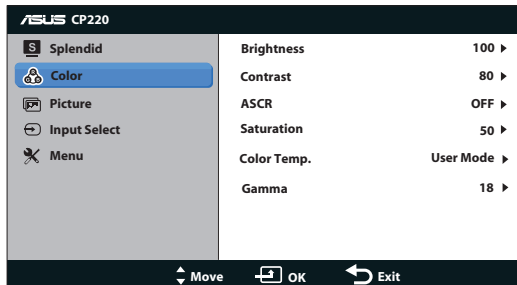
- **Theater Mode:** This is the best choice for movie watching with SPLENDID™ Video Intelligence.
- **Game Mode:** This is the best choice for game playing with SPLENDID™ Video Intelligence.
- **Night View Mode:** This is the best choice for playing dark-scene game or watching movie with SPLENDID™ Video Intelligence.
- **sRGB:** This is the best choice for viewing photos and graphics from PCs.



- In the User Mode of the Color Temp., the user may configure the value of the prime color R (red), G (green), and B (blue) ranging from 0 to 100.

## 2. Color

Select the image color you like from this function.



- **Brightness:** The adjusting range is from 0 to 100. The \* / ▲ button is also a hot key to activate this function.
- **Contrast:** The adjusting range is from 0 to 100.
- **ASCR:** To adjust the horizontal (H-Position) and the vertical position (V-Position) of the image from the VGA input. The adjustable range is from 0 to 100.
- **Saturation:** The adjusting range is from 0 to 100.
- **Color Temp.:** There are three preset white balance modes (D50, D65, and 9300K) and one User mode.
- **Gamma:** To alter the grayscale gamma between 18/2.2/2.5.



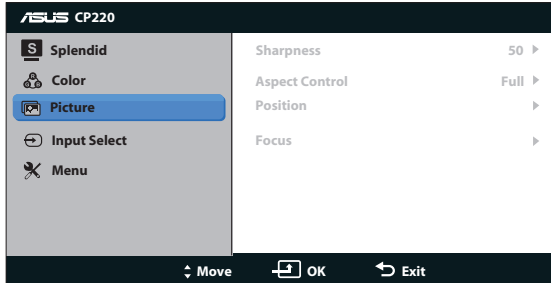
- Phase adjusts the phase of the pixel clock signal. With a wrong phase adjustment, the screen shows horizontal disturbances.
- Clock (pixel frequency) controls the number of pixels scanned by one horizontal sweep. If the frequency is not correct, the screen shows vertical stripes and the image is not proportional.



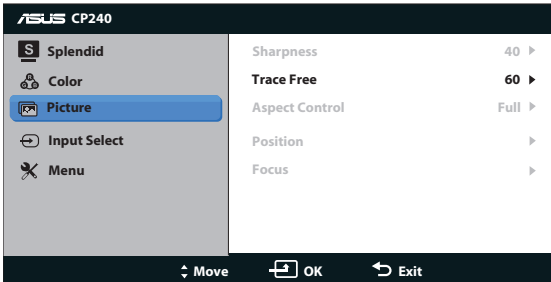
### 3. Picture

You may adjust the Aspect Control, Over Scan, Position (VGA only), and Focus (VGA only) in this menu item.

#### CP220:



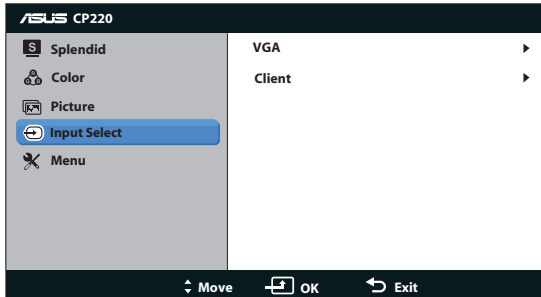
#### CP240:



- **Sharpness:** Adjust the picture sharpness. The adjusting range is from 0 to 100.
- **Trace free:** speed up the response time by Over Drive technology. The adjusting range is from lower 0 to faster 100. (Only for CP240)
- **Aspect Control:** Adjust the aspect ratio to "Full", "4:3".
- **Position:** Adjust the horizontal position (H-Position) and the vertical position (V-Position) of the image. The adjusting range is from 0 to 100 (only available for VGA input).
- **Focus:** Reduce Horizontal-line noise and Vertical-line noise of the image by adjusting (Phase) and (Clock) separately. The adjusting range is from 0 to 100 (only available for VGA input).

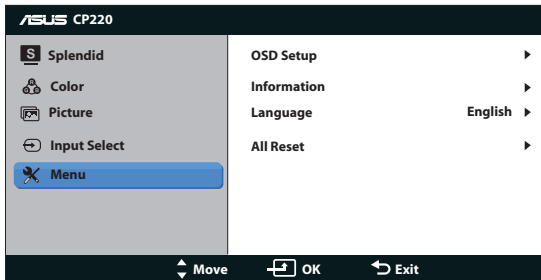
#### 4. Input Select

5. Select the input source from VGA, client source input signal.




#### 5. Menu

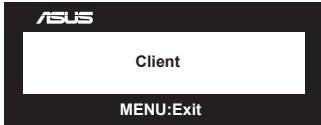
Adjusts the system configuration.



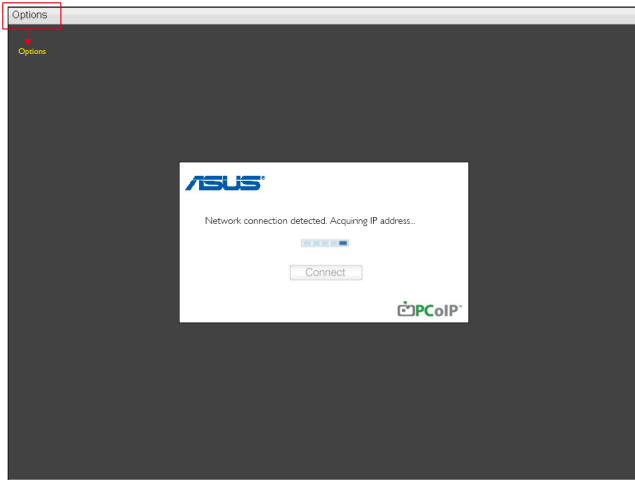
- **OSD Setup:** To adjust the OSD Timeout, DDC/CI, Transparency, and Power indicator.
- **Information:** To show the information of the display.
- **Language:** To select OSD language. The selections are: English, French, German, Spanish, Italian, Dutch, Russian, Traditional Chinese, Simplified Chinese, Japanese, Persian, Thai, Indonesian, Poland, Turkey, Portugal, Czech, Croatia, Hungary, Romania, and Korean.
- **All Reset:** Selecting “Yes” to revert all settings back to the factory default values.

## 3.2 Client setting

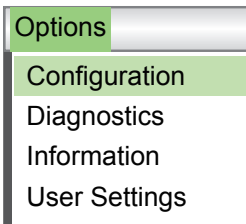
1. Turn on power and press  to select [Client] as your input source.



2. Login Client widget, click "[Options]" on top left corner.



3. Select "[Options]" --> "[Configuration]".



4. Enter “[Configuration]” --> [Network],and select “Enable DHCP”.

Configuration

Network IPv6 SCEP Label Discovery Session Language Power Display Access Audio Reset

Change the network settings for the device

Enable DHCP:

IP Address: 192 168 100 51

Subnet Mask: 255 255 255 0

Gateway: 192 168 100 1

Primary DNS Server: 192 168 100 2

Secondary DNS Server: 0 0 0 0

Domain Name:

FQDN:

Ethernet Mode: Auto

Enable 802.1X Security:

Identity:

Client Certificate:

OK Cancel Apply

5. Select [Session] sheet and enter “DNS Name or IP Address”, then click “Apply” to execute.

Configuration

Network IPv6 SCEP Label Discovery Session Language Power Display Access Audio Reset

vmware Horizon View™ Client

Configure the connection to a peer device

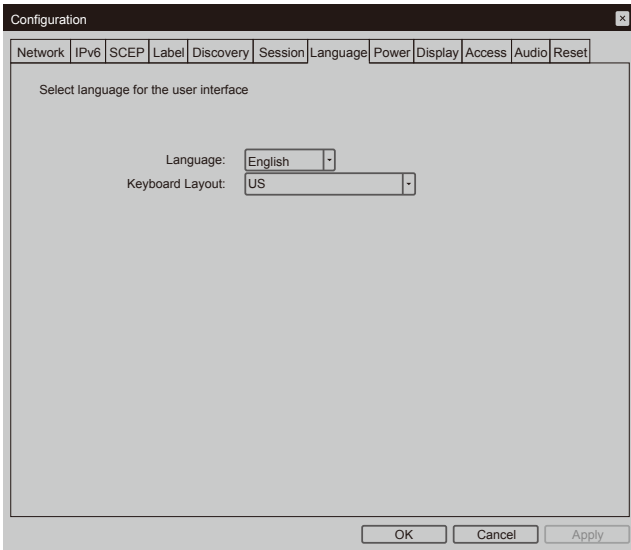
Connection Type: View Connection Server

DNS Name or IP Address: 192.168.100.252

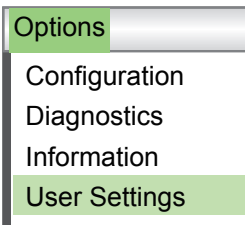
Advanced

OK Cancel Apply

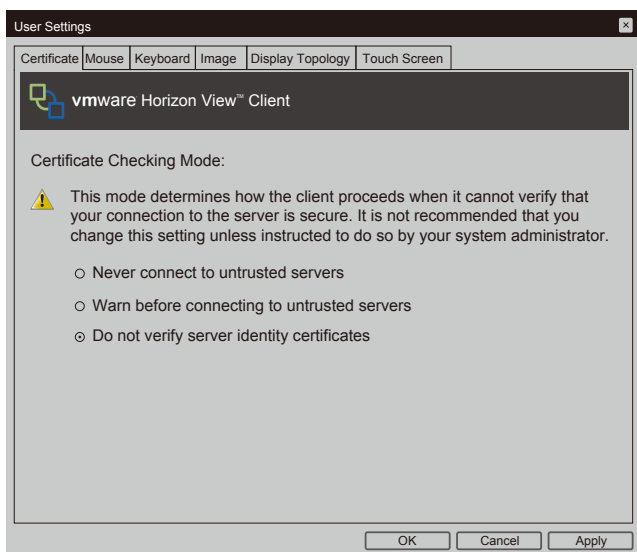
6. Select [Language] sheet ,and choice requisite language, then click “Apply” to execute.



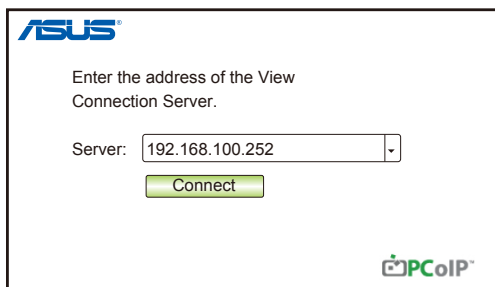
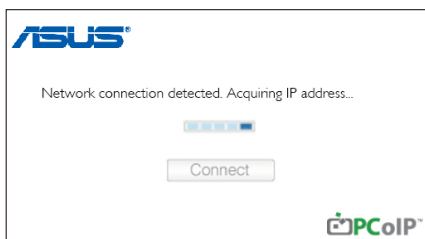
7. Select [OK] to finish [Configuration].
8. Return to main manual, select [Options] on top left corner and go to [User settings].



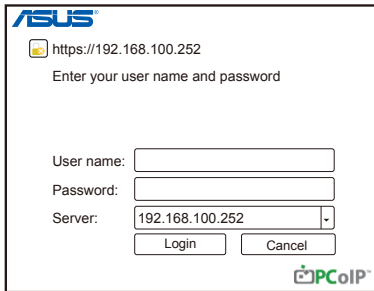
9. Select [Certificate] sheet, choice item and setting, then click [OK].



10. Link to server IP and enter connection interface, Click [Connect].

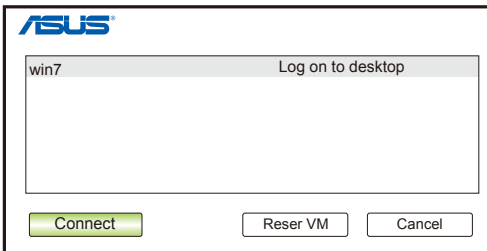


11. Enter "User name" and "password", then click [Login].



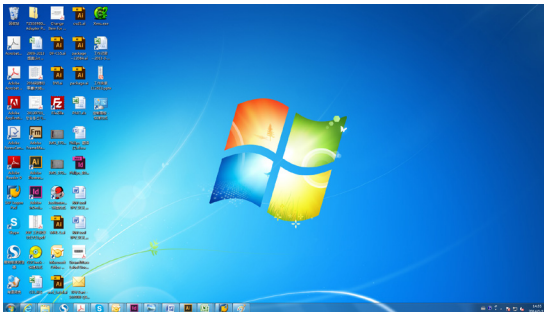
The image shows a login dialog box with the ASUS logo at the top left. Below the logo, there is a URL field containing "https://192.168.100.252" and a lock icon. The text "Enter your user name and password" is centered. Below this, there are three input fields: "User name:", "Password:", and "Server:". The "Server:" field has a dropdown menu with "192.168.100.252" selected. At the bottom, there are two buttons: "Login" and "Cancel". The PCoIP logo is in the bottom right corner.

12. Click [Connect].



The image shows a dialog box titled "Log on to desktop" with the ASUS logo at the top left. The main area contains a window titled "win7" which is currently empty. At the bottom, there are three buttons: "Connect", "Reser VM", and "Cancel".

13. Enter client interface.



14. Select desktop “Start”, choice “Logout” to exit client.










### 3.3 Specifications

Model	CP220	CP240
Panel Size	21.5" (54.61 cm)	23.8" (60.47 cm)
Max. Resolution	1920 x 1080	1920 x 1080
Brightness (Typ.)	250cd/m <sup>2</sup>	250cd/m <sup>2</sup>
Intrinsic Contrast Ratio (Typ.)	1000:1	1000:1
Viewing Angle (CR <sub>≥0</sub> )	160°(V); 170°(H)	178°(V); 178°(H)
Display Colors	16.7 M	16.7 M
Response Time (Typ.)	5ms	5ms (G to G)
D-Sub input	Yes	Yes
Power ON Consumption	ON Mode: <50 W*	ON Mode: <50 W*
Note	*Based on Energy Star 6.0 standard	*Based on Energy Star 6.0 standard
Speaker	Yes	Yes
Mic phone	Yes	Yes
Earphone	Yes	Yes
Power saving mode	< 6 W	< 6 W
Power off mode	< 0.5 W	< 0.5 W
Tilt	-5° to +23°	-5° to +23°
Mounting Interface	100mm x 100mm	100mm x 100mm
Phys. Dimension (WxHxD)	523.2 x 497.0 x 224.8 mm	567.60 x 517.15 x 244.81 mm
Box Dimension (WxHxD)	654 x 397 x 176 mm	685 x 421 x 179 mm
Net Weight (Esti.)	5.3 kg	6.0 kg
Gross Weight (Esti.)	7.6 kg	8.5 kg
Voltage Rating	AC 100~240V(External)	AC 100~240V(External)
Processor	SCALER TERA2321 FCBGA-396	
ROM	FLASH MX25L25635FMI-10G 256MB SOP-16	
RAM	DRAM H5TQ2G63D(F)FR-H9C/MT41J128M16JT-107G-K 2Gb x 2	
Client solution	Vmware	

### 3.4 Troubleshooting (FAQ)

Problem	Possible Solution
Power LED is not ON	<ul style="list-style-type: none"> <li>• Press the  button to check if the monitor is in the ON mode.</li> <li>• Check if the power cord is properly connected to the monitor and the power outlet.</li> </ul>
The power LED lights amber and there is no screen image	<ul style="list-style-type: none"> <li>• Check if the monitor and the computer are in the ON mode.</li> <li>• Make sure the signal cable is properly connected the monitor and the computer.</li> <li>• Inspect the signal cable and make sure none of the pins are bent.</li> <li>• Connect the computer with another available monitor to check if the computer is properly working.</li> </ul>
Screen image is too light or dark	<ul style="list-style-type: none"> <li>• Adjust the Contrast and Brightness settings via OSD.</li> </ul>
Screen image is not centered or sized properly	<ul style="list-style-type: none"> <li>• Press the  /  button for two seconds to automatically adjust the image.</li> <li>• Adjust the H-Position or V-Position settings via OSD.</li> </ul>
Screen image bounces or a wave pattern is present in the image	<ul style="list-style-type: none"> <li>• Make sure the signal cable is properly connected to the monitor and the computer.</li> <li>• Move electrical devices that may cause electrical interference.</li> </ul>
Screen image has color defects (white does not look white)	<ul style="list-style-type: none"> <li>• Inspect the signal cable and make sure that none of the pins are bent.</li> <li>• Perform Reset via OSD.</li> <li>• Adjust the R/G/B color settings or select the Color Temperature via OSD.</li> </ul>
Screen image is blurry or fuzzy	<ul style="list-style-type: none"> <li>• Press the  /  button for two seconds to automatically adjust the image (for VGA mode only).</li> <li>• Adjust the Phase and Clock settings via OSD.</li> </ul>
No sound or sound is low	<ul style="list-style-type: none"> <li>• Make sure the audio cable is properly connected to the display</li> <li>• Adjust the volume settings of both your display and computer.</li> <li>• Make sure the computer sound card driver is properly installed and activated.</li> </ul>

## 3.5 Supported Timing List

VESA / IBM Modes Support timing (D-SUB inputs)

Resolution	Refresh Rate	Horizontal Frequency
640 x 350	70Hz	31.469KHz
640 x 480	60Hz	31.469KHz
640 x 480	67Hz	35KHz
640 x 480	75Hz	37.5KHz
720 x 400	70Hz	31.469KHz
800 x 600	56Hz	35.156KHz
800 x 600	60Hz	37.879KHz
800 x 600	72Hz	48.077KHz
800 x 600	75Hz	46.875KHz
848 x 480	60Hz	31.02KHz
1024 x 768	60Hz	48.363KHz
1024 x 768	70Hz	56.476KHz
1024 x 768	75Hz	60.023KHz
1152 x 864	75Hz	67.5KHz
1280 x 720	60Hz	44.772KHz
1280 x 800	60Hz	49.702KHz
1280 x 960	60Hz	60KHz
1280 x 1024	60Hz	63.981KHz
1280 x 1024	75Hz	79.976KHz
1366 x 768	60Hz	47.712KHz
1440 x 900	60Hz	55.935KHz
1680 x 1050	60Hz	65.29KHz
1680 x 1050	60Hz	64.674KHz
1920 x 1080	60Hz	67.5KHz
1920 x 1080	60Hz	66.587KHz

\* The modes not listed in the above tables may not be supported. For an optimal resolution, we recommend that you choose a mode listed in the above table.

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