Lenovo Legion R45w-30 User Guide

Lenovo

Product numbers

F234455Y0

67B1-GAC3-WW

67B1-GCC3-WW

Contents

Safety information

General Safety guidelines

For tips to help you use your computer safely, go to:
http://www.lenovo.com/safety

Before installing this product, read the Safety Information.

⚠

DANGER

To avoid shock hazard:
- Do not remove the covers.
- Do not operate this product unless the stand is attached.
- Do not connect or disconnect this product during an electrical storm.
- The power cord plug must be connected to a properly wired and grounded power outlet.
- Any equipment to which this product will be attached must also be connected to properly wired and grounded power outlets.
- To isolate the monitor from the electrical supply, you must remove the plug from the power outlet. The power outlet should be easily accessible.

To take special precautions to avoid the introduction of hazards when operating, installing, servicing, transporting or storing equipment, the necessary instructions shall be made available. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Handling:
- If your monitor weighs more than 18 kg (39.68 lb), it is recommended that it be moved or lifted by two people.

Chapter 1. Getting Started

This User's Guide provides detailed operation instructions for the user. For quick instruction overview, please see the Setup Poster for brief information.

R45w-30 supports Lenovo Accessories and Display Manager*- **Artery**.
*Formerly Lenovo Display Control Center.

Shipping contents

The product package should include the following items:

- Information Flyer
- Lenovo Limited Warranty Booklet
- Curved Panel Monitor
- Power Cord
- DP Cable
- USB -A to B cable
- Base
- Stand
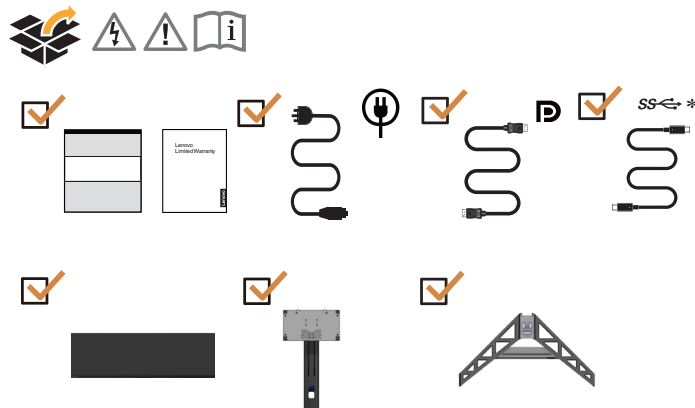
*: Depending on many factors such as the processing capability of peripheral devices, file attributes, and other factors related to system configuration and operating environments, the actual transfer rate using the various USB connectors on this device will vary and is typically slower than the data rates as defined by the respective USB specifications: 5 Gbit/s for USB 3.2 Gen 1; 10 Gbit/s for USB 3.2 Gen 2 & 20 Gbit/s for USB 3.2 Gen2x2.

Notice for use

To set up your monitor, please see the illustrations below.

Note: Do not touch the screen of the monitor. The screen is made of glass and can be damaged by rough handling or excessive pressure.
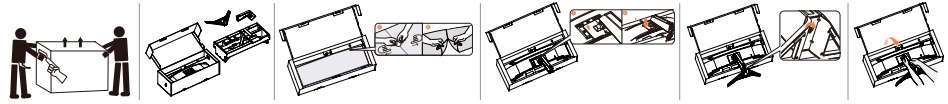
1. Take out the Top cushion and accessories.
2. Mounting the stand to monitor's recess.
   ● Insert the three tabs on the upper part of the stand to the groove on the back of the monitor.
   ● Press the stand down till it snaps into place.
3. Insert the base towards the stand and tighten the thumbscrew.
4. Stand up the monitor with both hands carefully.

Note: Do not rotate the overall unit vertically or 180 degrees during use.

Product overview

In this section, we will describe how to adjust the position of the monitor; how to set user controls; how to use the cable lock slot.

Adjustment type

Tilt

Please see the illustration below for an example of the tilt range.

Swivel

With the built-in pedestal, you can tilt and swivel the monitor for the most comfortable viewing angle.

-30° ⟷ 30°
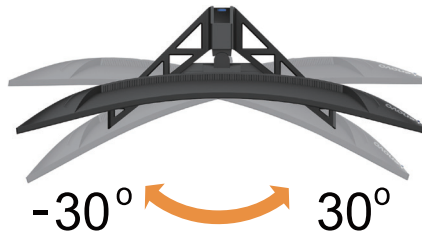
Height Adjustment

For height adjustment, user needs to press down or lift up the monitor.

135mm

Monitor controls

The keypad controls on the panel frame are accesses to various functions.

For information on how to utilize these keypad controls, please see "Adjusting your monitor image" on page 2-2.

Cable lock slot

Your monitor is equipped with a cable lock slot located on the rear of your monitor (in the lower position).

Setting up your monitor

This section provides information on how to set up your monitor.

Connecting and turning on your monitor

Note: Before performing this procedure, be sure to read "Safety information" on page iii.

1. Power off your computer and all attached devices, then unplug the computer power cord.

2. Connect the cables according to below icon indication.
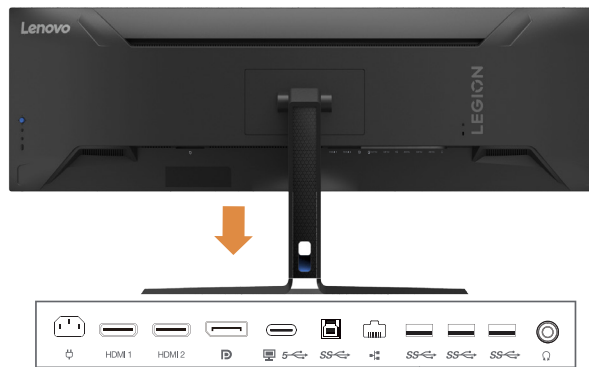
Connectors:
1 x Power
2 x HDMI 2.1
1 x DisplayPort 1.4 in
1 x USB-C 3.2 Gen 1 (upstream)
1 x USB-B 3.2 Gen 1 (upstream)
1 x RJ-45 (10M/100M/1G/2.5G)
3 x USB-A 3.2 Gen1 (downstream)
1 x Audio Out

3. Connect one end of the HDMI cable to the monitor HDMI connector and the other end to the computer.
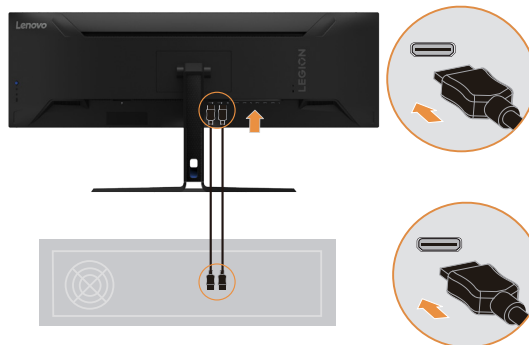
Note: Lenovo recommends that customers who require to use the HDMI2.1 input on their monitors purchase the "Lenovo HDMI to HDMI Cable OB47070" website: www.lenovo.com/support/monitoraccessories.

4. Connect one end of the DP cable to the DP input port of the monitor and the other end of the DP cable to the computer.
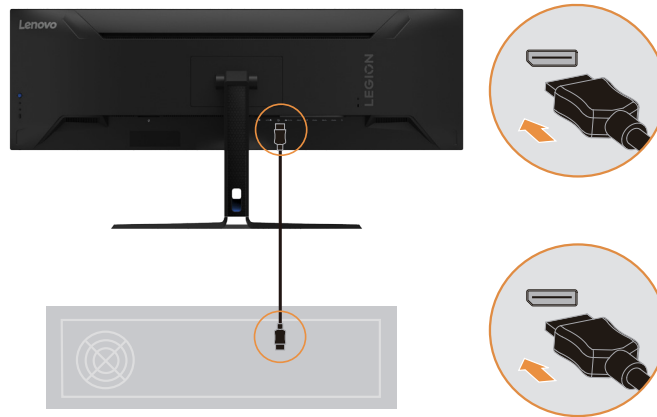
Note: Lenovo recommends users who need to use the DP cable on their monitors to purchase the "Lenovo DisplayPort to DisplayPort cable 0A36537" website: www.lenovo.com/support/monitoraccessories.

5. Connect one end of the USB Type-C cable to the USB Type-C port of the monitor and the other end to the USB Type-C port of the computer.
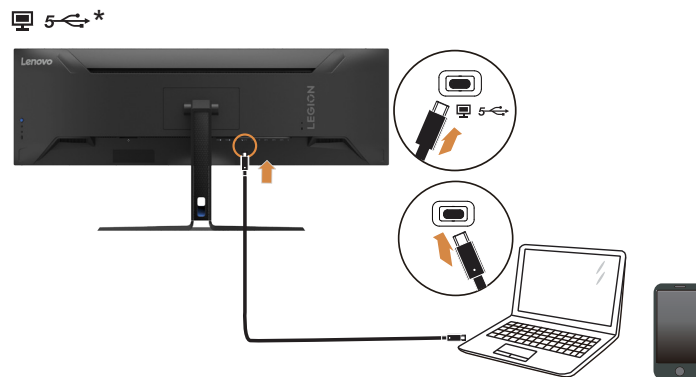
Note: The USB Type-C port of this monitor provides data, video and power transmission.

The host device must support DisplayPort Alt mode (video, charging and USB 3.1) via the USB Type-C interface.

Power supplies 5VDC/3A, 9VDC/3A, 15VDC/3A, 20VDC/2.25A, 20VDC/3.75A up to 75W.

The maximum load of all external ports is 75W. When USB-A is operating, the maximum output of USB-C is 20VDC/2.25A.

6. Connect one end of the USB cable to the USB upstream terminal on the back of the monitor, and connect the other end of the USB cable to an appropriate USB port on your computer.

SS⬅⬆➡ *

SS⬅➡
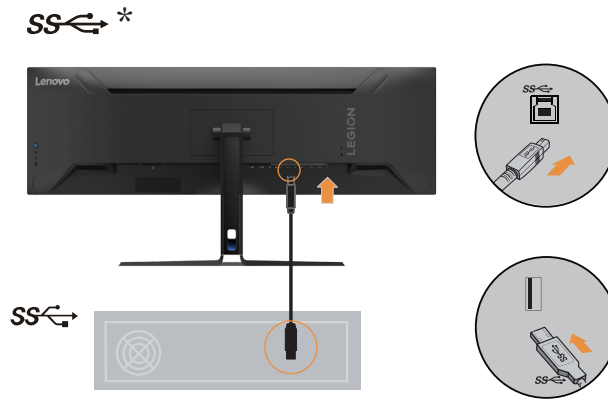
7. Connect one end of the USB cable to the USB downstream terminal on the side of the monitor, and connect the other end of the USB cable to an appropriate USB port on your device.

   Note:

   1. The USB downstream port does not provide power while the monitor is switched off.

   2. Power output for USB-A: 5V/0.9A.

SS⬅➡ *
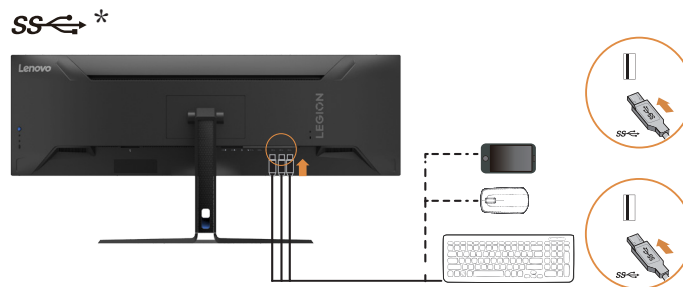
8. Connect the speaker's audio cable and audio jack of monitor to transfer audio source from DP, USB-C or HDMI.

   Note 1: The audio output in DP, USB-C and HDMI modes.

   Note 2: Excessive sound pressure from ear-/headphones can cause hearing damage/hearing loss.

9. Plug the power cord into the monitor, and then plug the monitor power cord and computer cord into a grounded power outlet.

Note:
A certified power supply cord has to be used with this equipment. The relevant national (regional) installation and/or equipment regulations shall be considered. The certified power cord used should not be lighter than the ordinary PVC flexible cord specified by IEC 60227 (marking H05VV-F 3G 0.75mm^2 or H05VVH2-F2 3G 0.75mm^2). According to IEC 60245 (marking H05RR-F 3G 0.75mm^2), synthetic rubber cord should be used.
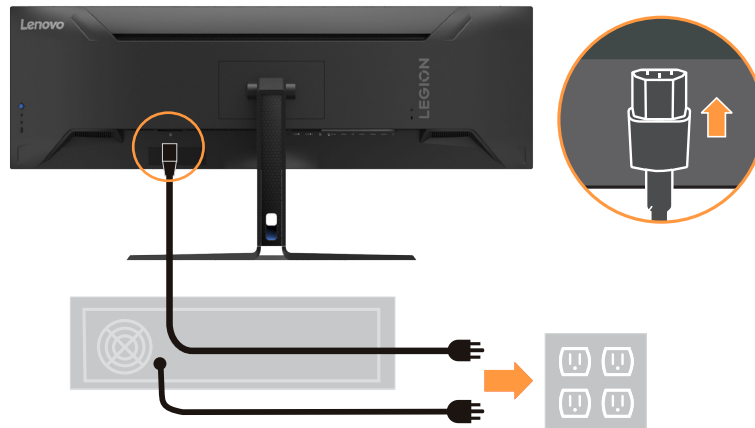
10. Connect one end of the network cable to the Ethernet interface of the monitor and the other end to the router.

Network
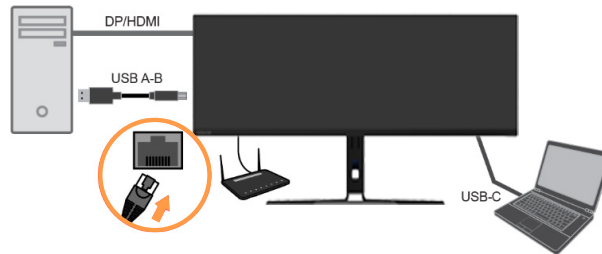
11. Connect the cables with cable clip.
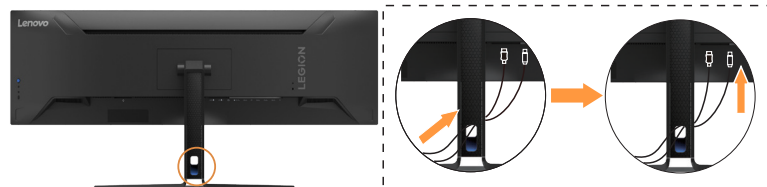
12. Power on the monitor and the computer.

13. When you install the monitor driver, download the driver that corresponds to your monitor model from the Lenovo website https://pcsupport.lenovo.com/solutions/r45w_30.
Refer to the "Manually installing the monitor driver" on page 3-5 section to install the driver.

PBP
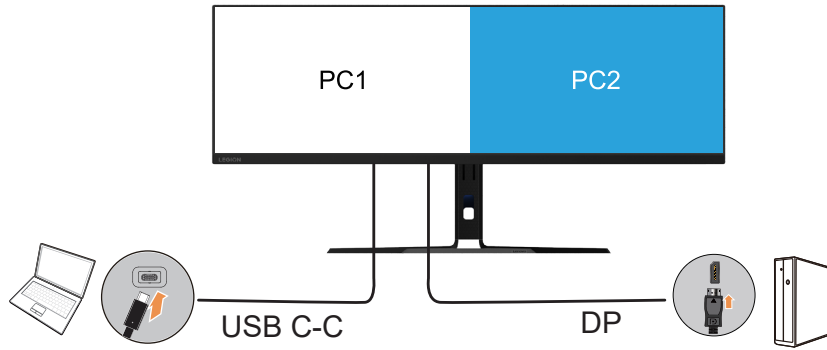
The PBP (Picture-by-Picture) function make the monitor to display two different video sources simultaneously. User can select any one of 4 inputs (DP, HDMI1, HDMI2, USB-C) for the left screen, select another input for the right one.

For example, the left screen PC1 could be input of DisplayPort, HDMI or USB-C notebook, the right screen PC2 would be rest input.

The Layout of PBP is always 5:5 of which is for the best experience and highest working efficiency, best resolution for each sub-screen is 2560x1440@165Hz (HDMI 2.1, DP, USB-C); 2560x1440@144Hz (HDMI 2.0).

PIP
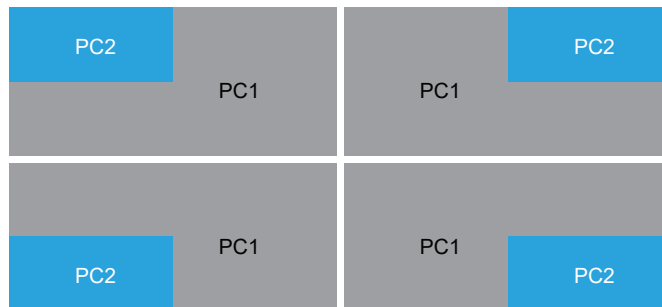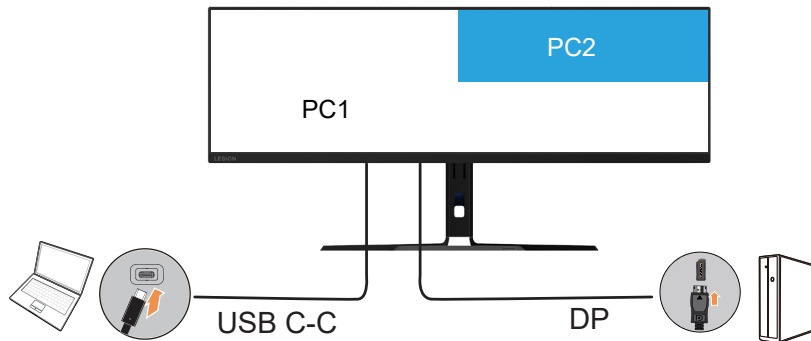
As same to PBP, the PIP (Picture-in-Picture) function can receive two different video sources too. The best resolution of foreground PC2 is 5120x1440@165Hz.

The foreground PC2 sub-screen can be placed on top left, top right, bottom left, bottom right of monitor.

True Split

Step 1 Connect your PC to monitor thru the USB-C or DisplayPort.

Model 1   Model 2
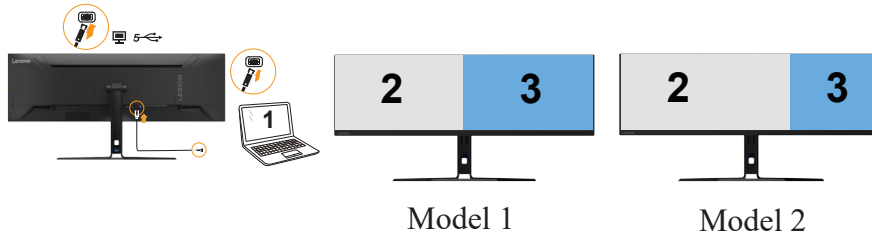
Step 2 Enable True Split in OSD.
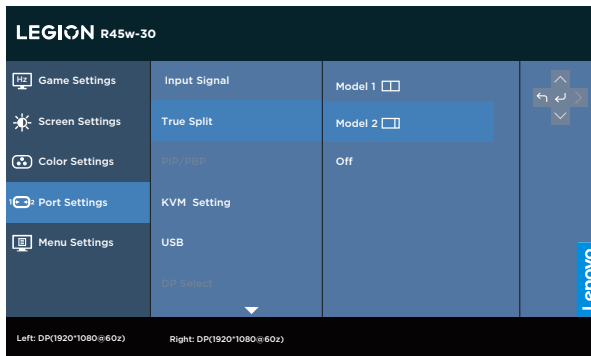
Step 3 Press Win ⊞ +P to select Extend mode in Microsoft Windows OS.
Ex.Windows 10.
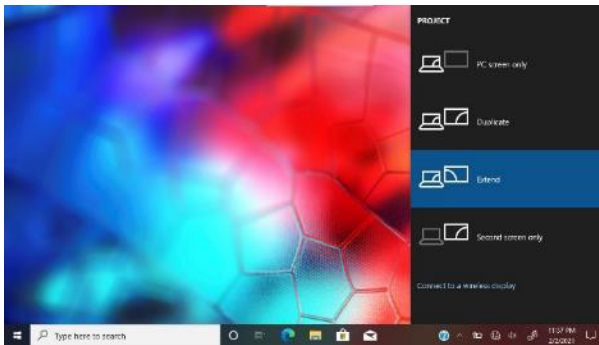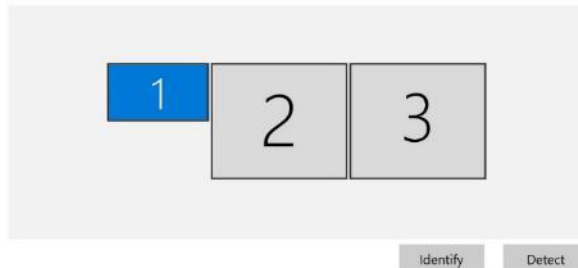
Note: On Window control panel, 2 and 3 indicate your R45w-30 monitor, screen 1 indicate your notebook screen. You can layout all the screens appropriately.

Model 1
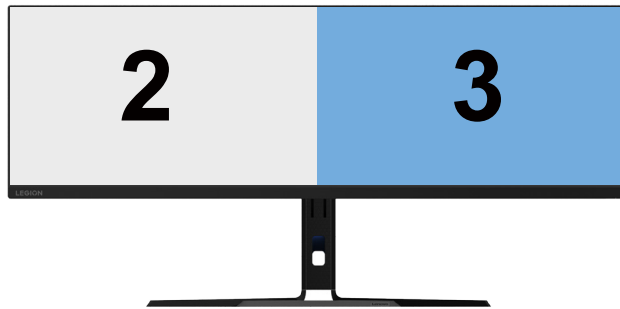
Model	OSD setting	Left sub-screen	Right sub-screen
Model 1	DP 1.4	2560x1440@120Hz	2560x1440@120Hz
	DP 1.2	2560x1440@60Hz	2560x1440@60Hz
	USB-C (USB3.2 Mode)	2560x1440@60Hz	2560x1440@60Hz
	USB-C (USB2.0 Mode)	2560x1440@120Hz	2560x1440@120Hz

Model 2
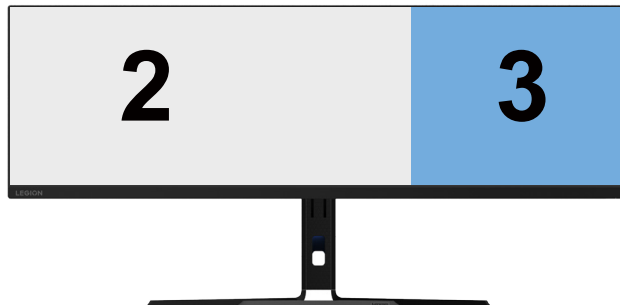
Model	OSD setting	Left sub-screen	Right sub-screen
Model 2	DP 1.4	3360x1440@120Hz	1760x1440@120Hz
	DP 1.2	3360x1440@60Hz	1760x1440@120Hz
	USB-C (USB3.2 Mode)	3360x1440@60Hz	1760x1440@60Hz
	USB-C (USB2.0 Mode)	3360x1440@120Hz	1760x1440@120Hz

KVM

Built-in KVM Switch allows users to operate two computers that connect.
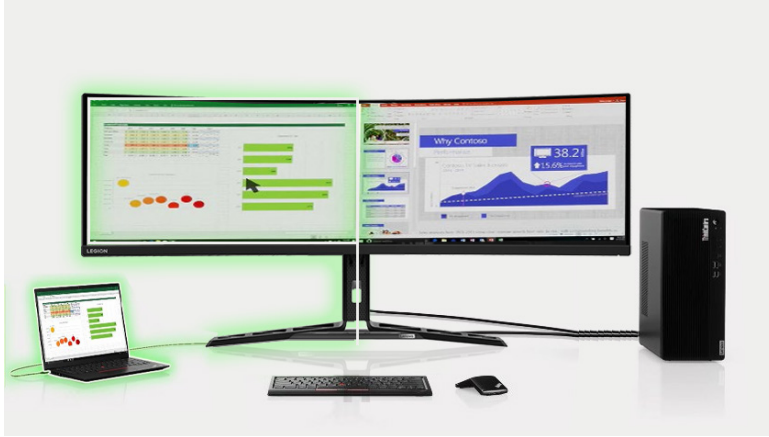
How to enable KVM
The hotkey of KVM locate on the specific button of front bezel.
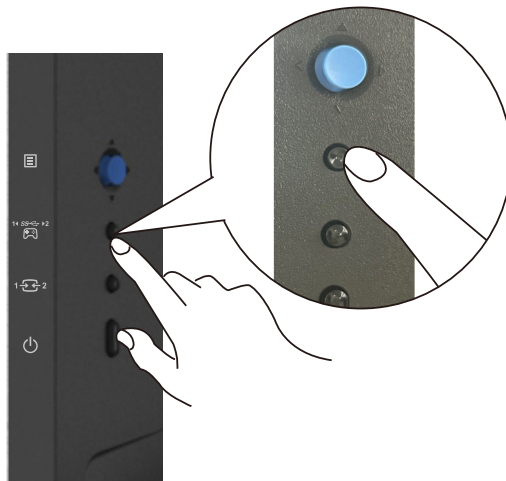
After operating , the OSD pops up. The USB devices and input source will be switched to another upstream port after OSD disappears, else manually press the "Menu key" to switch immediately.
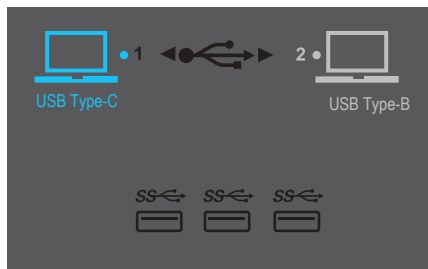
Network

Network
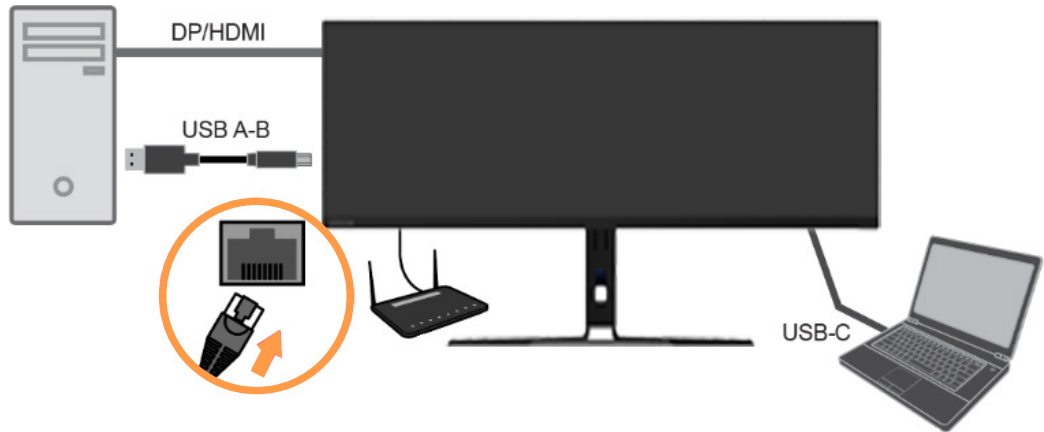
This monitor can support one PC to access internet stably by the Ethernet port with 2.5G bandwidth, thru USB-B port of monitor by USB A-B cable, or thru USB-C port.

- PXE boot

- MAC address pass through (MAPT): This monitor support MAPT from the S0 (on), S3 (Sleep), S4 (Hibernate), S5 (Off) by selected ThinkPad models.

- Wake on LAN (WoL): This monitor support WoL from the S3 (Sleep), S4 (Hibernate), S5 (Off) by selected ThinkPad models.

- Please download the SW "Dragon" to get a state of Ethernet optimization function.

Best Resolution

To get the best experience, suggest setting below resolution for your PC.

PC	Monitor OSD setting	
	HDMI 2.0	HDMI 2.1
HDMI 2.0	3840x1080@120Hz	5120x1440@60Hz
HDMI 2.1	3840x1080@120Hz	5120x1440@165Hz

PC	Monitor OSD setting	
	HDR Off (DP 1.2)	HDR On (DP 1.4)
DP 1.2	5120x1440@60Hz	5120x1440@60Hz
DP 1.4	5120x1440@60Hz	5120x1440@165Hz

USB device
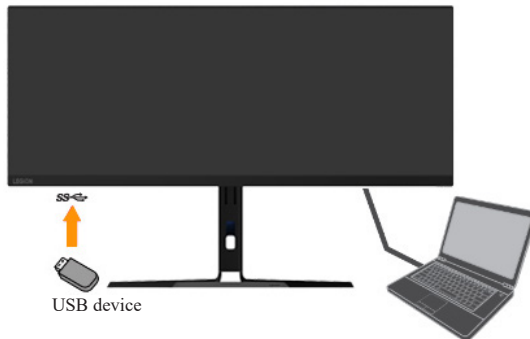
PC	Monitor OSD setting	Supported USB Speed
USB-C Gen 1 (Alt Mode DP 1.2)	5120x1440@60Hz	USB 2.0/3.0
USB-C Gen 2 (Alt Mode DP 1.4)	5120x1440@165Hz	USB 2.0/3.0

• Above tables is based on HDR setting off in Windows OS.

• The best resolution is depending on your PC too.

Registering your option

Thank you for purchasing this Lenovo™ product. Please take a few moments to register your Product and provide us with information that will help Lenovo to better serve you in the future. Your feedback is valuable to us in developing products and services, as well as in developing better ways to communicate with you. Register your option on the following Website: http://www.lenovo.com/register.

Lenovo will send you information and updates on your registered product unless you indicate on the Web site questionnaire that you do not want to receive further information.

Chapter 2. Adjusting and Using the Monitor

This section will give you information on adjusting and using your monitor.

Comfort and accessibility

Good ergonomic design is important to get the most from your personal computer and to avoid discomfort. Arrange your workplace and the equipment you use to suit your individual needs and the kind of work that you perform. In addition, use healthy work habits to maximize your performance and comfort while using your computer. For more detailed information on any of these topics, visit the Healthy Computing Website at: http://www.lenovo.com/healthycomputing/.

Arranging your work area

Use a work surface of appropriate height and sufficient working area to allow you to work in comfort. Organize your work area to match the way you use materials and equipment. Keep your work area clean and clear for the materials that you typically use and place the items that you use most frequently, such as the computer mouse or telephone, within the easiest reach.
Equipment layout and setup play a large role in your working posture. The following topics describe how to optimize equipment setup to achieve and maintain good working posture.

Positioning your monitor

Position and adjust your computer monitor for comfortable viewing by considering the following items:

- **Viewing distance:** Recommended viewing distance between the eye and the monitor screen is 1.5 x the diagonal of the screen. Solutions in meeting this required distance in cramped office situations include pulling the desk away from the wall or divider to make room for the monitor, using flat panel or compact displays to place the monitor in the desk corner, or placing the keyboard in an adjustable drawer to create a deeper working surface.

1.5 times of screen diagonal

- **Monitor height:** Position the monitor so your head and neck are in a comfortable and neutral (vertical, or upright) position. If your monitor does not have height adjustments, you might have to place books or other sturdy objects under the base of the monitor to achieve the desired height. A general guideline is to position the monitor such that the top of the screen is at or slightly below your eye-height when you are comfortably seated. However, be sure to optimize your monitor height so the line of site between your eyes and the center the monitor suits your preferences for visual distance and comfortable viewing when your eye muscles are in a relaxed state.

- **Tilt:** Adjust the tilt of your monitor to optimize the appearance of the screen content and to accommodate your preferred head and neck posture.

- **General location:** Position your monitor to avoid glare or reflections on the screen from overhead lighting or nearby windows.

The following are some other tips for comfortable viewing of your monitor:

- Use adequate lighting for the type of work you are performing.

- Use the monitor brightness, contrast controls (if equipped) to optimize the image on your screen to meet your visual preferences.

- Keep your monitor screen clean so you can focus on the screen's contents.

Any concentrated and sustained visual activity can be tiring for your eyes. Be sure to periodically look away from your monitor screen and focus on a far object to allow your eye muscles to relax. If you have questions on eye fatigue or visual discomfort, consult a vision care specialist for advice.

Quick tips for healthy work habits

The following information is a summary of some important factors to consider to help you remain comfortable and productive while you use your computer.

- **Good posture starts with equipment setup:** The layout of your work area and the setup of your computer equipment have a large effect on your posture while using your computer. Be sure to optimize the position and orientation of your equipment by following the tips outlined in "Arranging your work area" on page 1-15 so you can maintain a comfortable and productive posture. Also, be sure to use the adjustment capabilities of your computer components and office furniture to best suit your preferences now and as your preferences change over time.

- **Minor changes in posture can help avoid discomfort:** The longer you sit and work with your computer, the more important it is to observe your working posture. Avoid assuming any one posture for an extended period of time. Periodically make minor modifications in your posture to help deter any discomforts that might arise. Make use of any adjustments that your office furniture or equipment provide to accommodate changes in posture.

- **Regular short breaks help ensure healthy computing:** Because computing work is mainly static activity, short breaks during work are especially important. Periodically, stand up from your work area, stretch, walk around or have a drink etc., to take a short break from using your computer. A short break from work gives your body a welcome change in posture and helps to ensure you remain comfortable and productive while working.

Accessibility information

Lenovo is committed to providing greater access to information and technology to people with disabilities. With assistive technologies, users can access information in the way most appropriate to their disability. Some of these technologies are already provided in your operating system; others can be purchased through vendors or accessed at:

https://lenovo.ssbbartgroup.com/lenovo/request_vpat.php

Adjusting your monitor image

This section describes the control features to adjust your monitor images.

Using direct access controls

Direct access controls can be used when the On-Screen Display (OSD) is not displayed.

	Icon	Control	Description
1	↵ ◯	Enter key	Press to open main menu while there is no any OSD on the screen.
	≫ ▷	Right key	(1) Press to enter next level on main menu or sub menu. (2) Press to Increase current value on adjustment bar. (3) It is a shortcut key for directly opening brightness adjustment bar while there is no any OSD on the screen. Press and hold for 3 seconds, then the brightness/volume increase 10 values. Press and hold for 5 seconds, then the brightness increase to 100.
	↰ ◁	Left Key	(1) Press to exit current OSD or return to previous level. (2) Press to decrease current value on adjustment bar. (3) It is a shortcut key for directly opening brightness adjustment bar while there is no any OSD on the screen. Press and hold for 3 seconds, then the brightness/volume decrease 10 values. Press and hold for 5 seconds, then the brightness decrease to 0.
	∨ ▽	Down Key	(1) Press to move to next item on menu. (2) It is a shortcut key for directly opening volume adjustment bar while there is no any OSD on the screen.
	∧ △	Up Key	(1) Press to move to last item on menu. (2) It is a shortcut key for directly opening volume adjustment bar while there is no any OSD on the screen.
2	1◄ SS⇔ ►2 🎮	One Key Switch	(1) It is a shortcut key for directly opening the menu of KVM while there is no any OSD on the screen. (2) When press and hold for 5 seconds, it is a shortcut key for directly opening the menu of game mode while there is no any OSD on the screen.
3	1⇄2	Input Source (No menu on the screen)	(1) It is a shortcut key for directly opening the menu of input source while there is no any OSD on the screen. (2) Press and hold for 10 seconds, then Main menu will be Locked/un-Locked.
4	⏻	Power (Under any situation)	Press to turn the monitor on/off.

Using On-Screen Display (OSD) controls

To adjust the settings, the user controls can be viewed through the OSD.
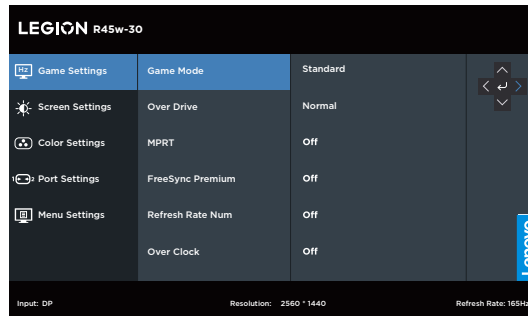
To use the controls:

1. Press ▤ to open the main OSD menu.

2. Use ⌃ or ⌄ to move among the icons. Select an icon and press ↵ to access the selected function. If there is a sub-menu, you can move between options using ⌃ or ⌄, then press ↵ to select that function. Use ⌃ or ⌄ to make adjustments then press ↵ to save.

3. Press 🔙 to move backwards through the sub-menus and exit from the OSD.

4. Press and hold for 10 seconds to lock the OSD. This will prevent accidental adjustments to the OSD. Press and hold for 10 seconds to unlock the OSD and allow adjustments to the OSD.

Table 2-1. OSD functions

OSD Icon on Main Menu	Sub menu	Description	Controls and Adjustments
Hz Game Settings	Game Mode	[Standard]	All input ports
		Standard	
		FPS1: First person shooter 1 mode.	
		FPS2: First person shooter 2 mode.	
		Racing: Racing mode	
		RTS: Real-Time-Strategy mode.	
		Game1: [Brightness/Over Driver/Contrast/Relative Gamma]	
		Game2: [Brightness/Over Driver/Contrast/Relative Gamma]	
	Over Drive	Respond time enhancement	
		[Level 2] Off/Level 1/Level 2/Level 3/Level 4	
	MPRT	[Off] Off/On	
	AdaptiveSync	[Auto (AMD FreeSync Premium Pro)] Auto (AMD FreeSync Premium Pro)/Off	Only for DP/USB-C port
	FreeSync Premium Pro	[Auto] Off/Auto	Only for HDMI port
	Refresh Rate Num	Display the panel's current refresh rate on the screen. [Off] Off/Left Top/Right Top/Left Bottom/Right Bottom	All input ports
	Over Clock	[Off] Off/On	
Screen Settings	Brightness	Adjusts overall screen brightness. [75]0~100	All input ports
	Contrast	Adjusts difference between light and dark areas. [75]0~100	
	DCR	[Off] Off/On	
	HDR	[Auto] Auto/HDR Photo/HDR Movie/HDR Game/HDR 400/ HDR Off	
	Dark Boost	[Level 4] Level 1/Level 2/Level 3/Level 4	
	Scaling Mode	[Full Screen] Original AR/Full Screen	
	Sharpness	[40]0~100	
	Relative Gamma	[Default]-0.4/-0.2/Default/+0.2/+0.4/Off	
	Video Range	[Full Range 0-255] Auto/Full Range 0-255/Limited Range 16-235	
Color Settings	Color Temp.	[Warm] sRGB/Warm/Neutral/Cool/User (Select this option to enter the next page)	All input ports

Table 2-2. OSD functions

OSD Icon on Main Menu	Submenu	Description	Controls and Adjustments
Port Settings 1 ⇄ 2	Input Signal	Auto Switch Input The input will automatically switch to the next available input when: There is no input signal present. The time out period has expired. [Enable] Check box	All input ports
		USB-C	
		DP	
		HDMI1	
		HDMI2	
	True Split	[Off] Mode 1/Mode 2/Off	Only USB-C/DP port
	PIP/PBP	PIP/PBP [Off] Off/PBP(1:1)/PIP(Top/Right)/PIP(Bottom/Right)/PIP(Top/Left)/PIP(Bottom/Left)	All input ports
		Swap [Off] On/Off	
		PBP Source Left/Right USB-C/DP/HDMI 1/HDMI 2	
		PIP Source Background/Foreground USB-C/DP/HDMI 1/HDMI 2	
		Audio Source [Main] Main/Sub	
	KVM Selection	KVM [On] Off/On	Only USB-C/B port
		USB-C Priority [On] Off/On	
		USB-C Source [USB-C] USB-C/DP/HDMI1/HDMI2	
		USB-B Source [Auto] Auto/DP/HDMI1/HDMI2	
	USB	USB Charging [Off] Off/On	Only USB-C port
		Super USB-C Charging [Off] Off/On	
		Smart Power [Off] Off/On	
		USB Select [USB 3.2] USB 3.2/USB 2.0 Warnning: refresh rate may be changed	
	DP Select	[DP1.4] DP1.2/DP1.4	Only DP port
	HDMI Select	[HDMI 2.1] HDMI 2.0/HDMI 2.1	Only HDMI port
	Mirrored Power Button	USB-C This function allows you to turn on or off the device connected to the USB-C port. [Off] Off/On	Only USB-C port
		HDMI This function allows you to turn on or off the device connected to the HDMI port. [Off] Off/On	Only HDMI port

OSD Icon on Main Menu	Submenu	Description	Controls and Adjustments
Menu Settings	Information	Model	All input ports
		Firmware	
		Serial Number	
		Mode	
		Format	
	Language	Changes languages of menu. Note: The selected language only affects the language of the OSD. It has no effect on any software running on the computer.	
	Volume	[50]0~100	
	Button Repeat Rate	[Default] Default/Slow/Off	
	LED Indicator	[On] Off/On	
	OSD Timeout	Set the duration of time that the OSD will remain active when no operation is performed. [10]5~60 (1 seconds per unit)	
	Menu Position	[0]0~100	
	Transparency	[0]0/20/40/60/80/100	
	DDC/CI	[On] Off/On	
	Reset All Settings	Reset monitor to the original settings.	

*The use of Level 4 (Over Driver) may result in reduced display quality when fast moving video graphics are displayed.

Users should check Level 4 (Over Driver) to verify if it is compatible with any applications they would like to use it with.

*Overclocking time out in 30min to avoid unstable. The refresh rate will revert to the normal value.

Lenovo recommends a direct connection for this function. Please do not use an adapter cable or adapter.

Selecting a supported display mode

The display mode of the monitor uses is controlled by the computer. Therefore, refer to your computer documentation on how to change display modes.

The image size, position and shape might be changed when the display mode changes. This is normal and the image can be re-adjusted using automatic image setup and the image controls.

Unlike CRT monitors, which require a high refresh rate to minimize flicker, LCD or Flat Panel technology is inherently flicker-free.

Note: If your system has previously been used with a CRT monitor and is currently configured to a display mode outside the range of this monitor, you may need to reattach the CRT monitor temporarily until you have re-configured the system; preferably to 5120 x 1440 at 165 Hz, which is a common display mode.

The display modes shown below have been optimized at the factory.

Table 2-2. Factory set display modes

Address ability	Refresh rate
640 x 480	60 Hz, 72 Hz, 75 Hz
800 x 600	60 Hz, 72 Hz, 75 Hz
1024 x 768	60 Hz, 70 Hz, 75 Hz
1152 x 870	75 Hz
1280 x 720	60 Hz
1280 x 800	60 Hz
1280 x 960	60 Hz
1280 x 1024	60 Hz, 75 Hz
1440 x 900	60 Hz
1680 x 1050	60 Hz
1920 x 1080	60 Hz, 120Hz, 144Hz, 165Hz
2560 x 1440	60 Hz, 120Hz, 144Hz, 165Hz
5120 x 1440	60 Hz, 120Hz, 144Hz, 165Hz, 170Hz* (OverClock)

*Note:

1. Adaptive sync and 170Hz overclocking are test results obtained in a laboratory environment. The actual performance may vary depending on the user's environment.
2. The overclocking function will be automatically deactivated in 30 minutes. Overclocking too long may result in abnormal images or other bad results.

Understanding power management

Power management is invoked when the computer recognizes that you have not used your mouse or keyboard for a user-definable period. There are several states as described in the table below.

For optimal performance, switch off your monitor at the end of each working day, or whenever you expect to leave it unused for long periods during the day.

Table 2-3. Power indicator

State	Power Indicator	Screen	Restoring Operation
On	White	Normal	
Standby/Suspend	Orange	Blank	Press a key or move the mouse There may be a slight delay before the image reappears. **Note:** Standby also occurs if there is no image output to the monitor.
Off	Off	Blank	Press the power button There may be a slight delay before the image reappears.

Power Management Modes

VESA Modes	Horizontal Sync	Vertical Sync	Video	Power Indicator	Power Consumption
Normal operation	Active	Active	Active	White	165 W (maximum)* 34 W (typical)
Active-off mode	Inactive	Inactive	Off	Amber	Less than 0.5 W
Switch off	-	-	-	Off	Less than 0.3 W

* Maximum power consumption with max luminance.

This document is informational only and reflects laboratory performance. Your product may perform differently, depending on the software, components and peripherals you ordered and shall have no obligation to update such information. Accordingly, the customer should not rely upon this information in making decisions about electrical tolerances or otherwise. No warranty as to accuracy or completeness is expressed or implied.

Caring for your monitor

Be sure to turn off the power before you perform any maintenance on the monitor.

Do not:

- Apply water or liquid directly to your monitor.

- Use solvents or abrasives.

- Use flammable cleaning materials to clean your monitor or any other electrical equipment.

- Touch the screen area of your monitor with sharp or abrasive items. This type of contact may cause permanent damage to your screen.

- Use any cleaner which contains an anti-static solution or similar additives. This may harm the coating of the screen area.

Do:

- Lightly dampen a soft cloth with water and use this to gently wipe the covers and the screen.

- Remove grease or finger marks with a damp cloth and a little mild detergent.

Detaching the monitor base and stand

Step 1: Place the monitor on a soft and flat surface.

Step 2: Remove the screws from base before detaching base and stand from the monitor.
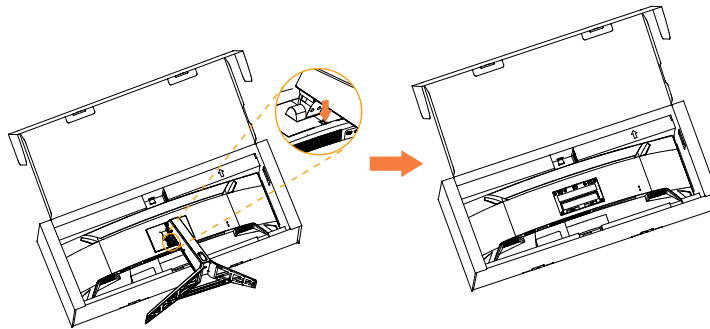
Chapter 3. Reference Information

This section contains monitor specifications, instructions to manually install the monitor driver, troubleshooting information.

Monitor specifications

Table 3-1. Monitor specifications for type-model F234455Y0

Dimensions	Depth	341.1 mm (13.43 inches)
	Height	528.4 mm (20.80 inches)
	Width	1089.9 mm (42.91 inches)
Stand	Tilt	Range: -5°~22°
Image	Viewable image size	1130.3 mm (44.50 inches)
	Maximum height	305.9 mm (12.04 inches)
	Maximum width	1087.5 mm (42.8 inches)
	Pixel pitch	0.212 mm x 0.212 mm (0.008 inches)
Power input	Rating	100-240 VAC 50~60 Hz 2.0 A
Power consumption **Note:** Power consumption figures are for the monitor and the power supply combined	Normal operation	<165 W (max) <34 W (Typical)
	Standby/Suspend	<0.5 W
	Off	<0.3 W
Video input (HDMI)	Input signal	HDMI
	Horizontal addressability	5120 pixels (maximum)
	Vertical addressability	1440 lines (maximum)
	Clock frequency	1340 MHz
Video input (DP)	Input signal	DP
	Horizontal addressability	5120 pixels (maximum)
	Vertical addressability	1440 lines (maximum)
	Clock frequency	8.1 GHz/Lane

Table 3-1. Monitor specifications for type-model F234455Y0

Video input (USB-C)	Input signal	USB-C
	Horizontal addressability	5120 pixels (maximum)
	Vertical addressability	1440 lines (maximum)
	Clock frequency	8.1 GHz/Lane
Communications	VESA DDC	CI
Supported Display Modes	Horizontal frequency	30 - 247 kHz
	Vertical frequency	48 - 165 Hz
	Native Resolution	5120 x 1440 @ 165 Hz
Temperature	Operating	0° to 40°C (32° to 104°F)
	Storage	-20° to 60°C (-4° to 140°F)
	Shipping	-20° to 60°C (-4° to 140°F)
Humidity	Operating	8% to 80% non-condensing
	Storage	5% to 95% non-condensing
	Shipping	5% to 95% non-condensing

Troubleshooting

If you have a problem setting up or using your monitor, you might be able to solve it yourself. Before calling your dealer or Lenovo, try the suggested actions that are appropriate to your problem.

Table 3-2. Troubleshooting

Problem	Possible cause	Suggested action	Reference
The words "Out of Range" are shown on the screen, and the power indicator is flashing white.	The system is set to a display mode which is not supported by the monitor.	If you are replacing an old monitor, reconnect it and adjust the display mode to within the specified range for your new monitor. If using a Windows system, restart the system in safe mode, then select a supported display mode for your computer. If these options do not work, contact the Support Center.	"Selecting a supported display mode" on page 2-7
The image quality is unacceptable.	The video signal cable is not connected with the monitor or system completely.	Be sure the signal cable is firmly plugged into the system and monitor.	"Connecting and turning on your monitor" on page 1-4
	The color settings may be incorrect.	Select another color setting from the OSD menu.	"Adjusting your monitor image" on page 2-2
	The automatic image setup function was not performed.	Perform automatic image setup.	"Adjusting your monitor image" on page 2-2
The power indicator is not lit and there is no image.	• The monitor's power switch is not switched on. • The power cord is loose or disconnected. • There is no power at the outlet.	• Be sure the power cord is connected properly. • Be sure the outlet has power. • Power on the monitor. • Try using another power cord. • Try using another electrical outlet.	"Connecting and turning on your monitor" on page 1-4
Screen is blank and power indicator is amber.	The monitor is in Standby/Suspend mode.	• Press any key on the keyboard or move the mouse to restore operation. • Check the Power Options settings on your computer.	"Understanding power management" on page 2-8

Table 3-2. Troubleshooting

Problem	Possible cause	Suggested action	Reference
The power indicator is amber, but there is no image.	The video signal cable is loose or disconnected from the system or monitor.	Be sure the video cable is connected with the system properly.	"Connecting and turning on your monitor" on page 1-4
	The monitor brightness and contrast are at the lowest setting.	Adjust the brightness and contrast setting on the OSD menu.	"Adjusting your monitor image" on page 2-2
One or more of the pixels appear discolored.	This is a characteristic of the LCD technology and is not an LCD defect.	If there are more than five pixels missing, contact the Support Center.	"Appendix A. Service and Support" on page A-1
• Lines or images are blurred in the text. • There are horizontal or vertical lines in images.	• Image setup has not been optimized. • The "Display Properties" settings of your system have not been optimized.	According to the resolution of the monitor itself, adjust the resolution setting of the system: 5120 x 1440 @ 165 Hz	"Adjusting your monitor image" on page 2-2
		Perform automatic image setup. If automatic image setup does not help, perform manual image setup.	"Selecting a supported display mode" on page 2-7
		When working in the native resolution, you may find additional improvements by adjusting the Dots Per Inch (DPI) setting on your system.	See the Advanced section of your system's display properties.

Manually installing the monitor driver

Below are steps for manually installing the monitor driver in Microsoft Windows 10, Microsoft Windows 11.

1. Turn off the computer, all attached devices.
2. Ensure that the monitor is connected correctly.
3. Turn on the monitor and then the system unit. Allow your computer to start the Windows operating system.
4. From the Lenovo website https://pcsupport.lenovo.com/solutions/r45w_30, find the corresponding monitor driver and download it to a PC to which this monitor is connected (such as a desktop).
5. Right-click the Windows **Start** button on the desktop, then click **Device Manager**, and double click **Monitor**.
6. Double-click **Generic Monitor**.
7. Click the **Driver** tab.
8. Click **Update Driver**, and then click **Browse Computer to find the driver**.
9. Click **Let me pick from a list of available divers on my computer**.
10. Click the **Have Disk...** button. By clicking the **Browse** button, browse and point to the following path: **X:\Monitor Drivers\Windows** (where X indicates "the folder in which the downloaded driver is located" (such as a desktop)).
11. Select **R45w_30.inf** file, Click **Open** button. Click **OK** button.
12. In the new window, select **R45w_30** and click **Next**.
13. After the installation is complete, delete all downloaded files and close all Windows.
14. Restart the system. The system will automatically select the refresh rate and the corresponding color matching profile.

Getting further help

If you still can't solve your problem, please contact the Lenovo Support Center. For more information on contacting the Support Center, please see "Appendix A. Service and Support" on page A-1

Service information

Customer responsibilities

The warranty does not apply to a product which has been damaged due to accident, misuse, abuse, improper installation, usage not in accordance with product specifications and instructions, natural or personal disaster, or unauthorized alterations, repairs or modifications.

The following are examples of misuse or abuse and not covered by warranty:

- Images burned onto the screen of a CRT monitor. Burned image is preventable by utilizing a moving screen saver or power management.

- Physical damage to covers, bezel, base and cables.

- Scratches or punctures on monitor screens.

Appendix A. Service and Support

The following information describes the technical support that is available for your product, during the warranty period or throughout the life of your product. Refer to the Lenovo Limited Warranty for a full explanation of Lenovo warranty terms.

Registering your option

Register to receive product service and support updates, as well as free and discounted computer accessories and content. Go to:
http://www.lenovo.com/register

Online technical support

Online technical support is available during the lifetime of a product at:
http://www.lenovo.com/support

Product replacement assistance or exchange of defective components also is available during the warranty period. In addition, if your option is installed in a Lenovo computer, you might be entitled to service at your location. A Lenovo technical support representative can help you determine the best alternative.

Telephone technical support

Installation and configuration support through the Customer Support Center will be available until 90 days after the option has been withdrawn from marketing. After that time, the support is cancelled, or made available for a fee, at Lenovo's discretion. Additional support is also available for a nominal fee.

Before contacting a Lenovo technical support representative, please have the following information available: option name and number, proof of purchase, computer manufacturer, model, serial number and manual, the exact wording of any error message, description of the problem, and the hardware and software configuration information for your system.

Your technical support representative might want to walk you through the problem while you are at your computer during the call.

Telephone numbers are subject to change without notice. The most up-to-date telephone list for Lenovo Support is always available at: http://www.lenovo.com/support/phone

Country or Region	Telephone Number
China	400-990-8888
South Africa	800982393
Argentina	0800-444-24.522(Spanish)
Australia	1300-557-073
Austria	800295730(German)
Belgium	80076524(French, Dutch)
Bolivia	800-100-764(Spanish)

Appendix B. Notices

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Recycling information

Lenovo encourages owners of information technology (IT) equipment to responsibly recycle their equipment when it is no longer needed. Lenovo offers a variety of programs and services to assist equipment owners in recycling their IT products. For information on recycling Lenovo products, go to:

http://www.lenovo.com/lenovo/recycling

環境配慮に関して

本機器またはモニターの回収リサイクルについて

企業のお客様が、本機器が使用済みとなり廃棄される場合は、資源有効利用促進法の規定により、産業廃棄物として、地域を管轄する県知事あるいは、政令市長の許可を持った産業廃棄物処理業者に適正処理を委託する必要があります。また、弊社では資源有効利用促進法に基づき使用済みパソコンの回収および再利用・再資源化を行う「PC 回収リサイクル・サービス」を提供しています。詳細は、
https://www.lenovo.com/jp/ja/services_warranty/recycle/personal/
をご参照ください。

また、同法により、家庭で使用済みとなったパソコンのメーカー等による回収再資源化が 2003 年 10 月 1 日よりスタートしました。詳細は、
https://www.lenovo.com/jp/ja/services_warranty/recycle/personal/
をご参照ください。

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Collecting and recycling a disused Lenovo computer or monitor

If you are a company employee and need to dispose of a Lenovo computer or monitor that isthe property of the company, you must do so in accordance with the Law for Promotion of Effective Utilization of Resources. Computers and monitors are categorized as industrial wasteand should be properly disposed of by an industrial waste disposal contractor certified by alocal government. In accordance with the Law for Promotion of Effective Utilization of Resources, Lenovo Japan provides, through its PC Collecting and Recycling Services, for the collecting, reuse, and recycling of disused computers and monitors. For details, visit the Lenovo Web site at https://www.lenovo.com/jp/ja/services_warranty/recycle/personal/. Pursuant to the Law for Promotion of Effective Utilization of Resources, the collecting and recycling of home-usedcomputers and monitors by the manufacturer was begun on October 1, 2003. This service is provided free of charge for home-used computers sold after October 1, 2003. For details, visit the Lenovo Web site at https://www.lenovo.com/jp/ja/services_warranty/recycle/personal/

Disposing of Lenovo computer components

Some Lenovo computer products sold in Japan may have components that contain heavymetals or other environmental sensitive substances. To properly dispose of disused components, such as a printed circuit board or drive, use the methods described above for collecting and recycling a disused computer or monitor.

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