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Quick Installation Guide

CAT. 5 USB KVM EXTENDER

VPX300

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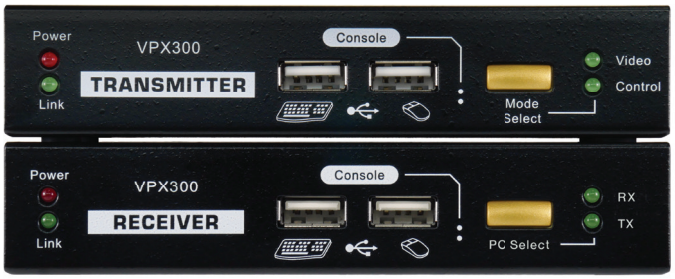


VPX300 (300 meter model)

FCC / CE STATEMENT

FCC Statement:

This equipment has been tested and found to comply with the regulations 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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this Quick Installation Guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case, the user will be required to correct the interference at his/her own expense.

CE Statement:

This is a Class B product in a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

30-190-VPX100XX-01-VT-10

*This document is subject to possible change without prior notice.

P/N: 30-190-VPX100XX-01-VT-10

1. INTRODUCTION

The CAT.5 USB KVM Extender VPX300 extends your keyboard, mouse, and monitor from your computer up to 300m away over a single CAT.5 UTP cable, providing excellent video quality.

The CAT.5 USB KVM Extender consists of two distinct units: the Receiver (RX) unit and the Transmitter (TX) unit. The TX and RX units are located at opposite ends of a CAT.5 UTP cable. A computer is connected to the TX unit at the local site, while access to the computer is extended across 300m to the console connected to the RX unit.

This allows the user to remotely access the computer via the RX unit's console. The RX unit also features a built-in KVM switching function, enabling the user to switch between two computers connected to the TX unit and the RX unit, respectively. This setup is particularly useful in environments like exhibition rooms, work floors, security rooms, locked server rooms, or other mission-critical scenarios.

This CAT.5 USB KVM extender set allows you to position your server at a distance from the user for security or spatial reasons. Additionally, it enables the user to manage and control two computers located at both the local and remote sites from the RX unit's console. The extender also supports firmware upgrades to enhance compatibility and functionality when necessary.

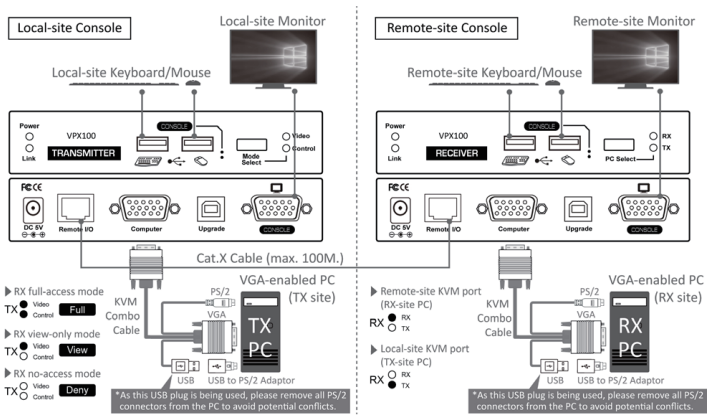
2. PACKAGE CONTENTS

Please check whether you have all the following items within the packaging box:

- Tramsmitter (TX) Unit x 1
- Receiver (RX) Unit x 1
- USB KVM Combo Cable x 2
- Power Adapters (DC5V) x 2
- Quick Installation Guide x 1

3. CONNECTION DIAGRAM

The diagram illustrated below is an example, the actual application may vary. All illustrated computer, accessories and monitors are not included in the package, it is for reference only.



4. FRONT&REAR PANELS

Mark	Description
a./1.	Power LED Indicator of the Transmitter Unit/Receiver Unit
b./2.	Link LED Indicator of the Transmitter Unit/Receiver Unit
c./3.	USB port 1 for Keyboard/Mouse
d./4.	USB port 2 for Keyboard/Mouse
e./5.	Mode Select button/PC Select button
f./6.	Video LED Indicator (Lights when RX monitor receives video source) / RX LED Indicator (Lights when the RX Console connects to the RX-site PC)
g./7.	Control LED Indicator (Lights when Receiver Console keyboard/mouse is allowed)/TX LED Indicator (Lights when the RX Console connects to the TX-site PC)
h./8.	Power jack (DC 5V)
i./9.	CAT.5 Extension Port [RJ-45, connect to the Receiver/Transmitter Unit via a CAT.5 UTP cable, 300m max.]
j./10.	Computer port [HDB-15(VGA+USB), connect to the TX-site computer connect to the RX-site computer using a 3-in-1 KVM Combo Cable] Cable]/COMPUTER port [HDB-15(VGA+USB), connect to the RX-site computer using a 3-in-1 KVM Combo Cable]
k./11.	Upgrade port (USB Type-B, dedicated for firmware upgrade)
l./12.	Transmitter Console Video port [HDB-15(VGA), connect to TX-site monitor]/Receiver Console Video port [HDB-15(VGA), connect to RXsite monitor]

5. SPECIFICATIONS

Model No.	VPX300
TX Connectors	1 x HDB15 Female (for Local-site monitor) 1 x HDB15 Female (for TX unit computer connection: using 3-in-1 KVM combo cable) 1 x USB Type-B Upgrade port 2 x USB Type-A Female Hub port 1 x RJ45 Socket (for connecting to RX unit) 1 x DC 5V Power Jack
RX Connectors	1 x HDB15 Female (for Remote-site monitor) 1 x HDB15 Female (for RX unit computer connection: using 3-in-1 KVM combo cable) 1 x USB Type-B Upgrade port 2 x USB Type-A Female Hub port 1 x RJ45 Socket (for connecting to TX unit) 1 x DC 5V Power Jack
DDC/EDID Emulation	2 Modes – Local-site monitor/Remote-site monitor DDC Emulation
RX unit OSD Support	Yes
TX unit LED Indicators	Power (red); Link/Video/Control (green)
RX unit LED Indicators	Power (red); Link/RX/TX (green)
Skew Compensation	for VPX300 only
Dimensions	131(L) x 65(W) x 25(H)mm
Weight	286g/unit
VGA Resolution	1920 x 1200@60Hz
Power Type	5V DC Power Adapter
Housing Material	Metal
Safety/Emission Certification	FCC, CE

6. INSTALLATION

Before you install the TX/RX units of the CAT.5 USB KVM Extender VPX300, you should have these items on the checklist:

1. The computer for extension should equip USB interfaces.
2. You should check that the computer display resolution is up to 1920 x 1200 pixels, with a commonly used refresh rate set to 60Hz, among others.
3. Prepare 2 sets of keyboards, mice, monitors - one set is for Localsite Transmitter Console and the other set is for Remote-site Receiver Console.
4. The two monitors used (one at the TX site and the other at the RX site) should have the same resolution and, preferably, be the same model.
5. Since the CAT.5 USB KVM extender only supports a standard 5-button mouse and keyboard, any advanced mouse or keyboard functions will not be supported by the CAT.5 extender.
6. Use a high-quality CAT.5 UTP cable [maximum 300m]. Note that a high-quality cable will ensure better video quality, even over longer distances.
7. Any cabling distance longer than 100m will experience increased signal degradation as the distance grows. However, using a highquality cable can help extend signals over longer distances with reduced degradation.
8. When choosing the path for the CAT.5 UTP cable, consider not only the shortest route but also any potential sources of significant electromagnetic interference.
9. There should be power outlets located near the extenders.

> Plan the layout path and deploy the UTP cable for extension

1. Plan the path through which the CAT.5 cable will be deployed across the distance between the Transmitter and the Receiver.

   You should choose the layout path not only based on the shortest length but also on minimizing electromagnetic interference.
2. Lay out the UTP cable according to the planned path.

> Configuring Transmitter Console

3. Connect one end of a CAT.5 cable to the CAT.5 Extension port (connector i) of the Transmitter.
4. Connect the power adapter to the Transmitter (connector h) to power it up before connecting any computer or other cables to it.
5. Connect the Transmitter to the TX PC, using the 3-in-1 KVM combo cable (connector j).
6. Connect a set of keyboard, mouse and monitor to the Transmitter's Console ports (connectors: c, d and l).
7. Power on the TX PC, and check if the keyboard, mouse and video are working well, and then go on the following steps.

> Configuring the Receiver Console

8. Connect the CAT.5 cable from the Transmitter to the CAT.5 Extension port (connector 9) of the Receiver.
9. Connect the power adapter to the Receiver's power jack (connector 8) to power it up before connecting any devices to it.
10. Connect a set of keyboard, mouse, and monitor to the Receiver's Console ports (connector 3, 4, 12).
11. Check if the keyboard, mouse and monitor are working well. At this time, the video output of the RX unit might be blurred since it hasn't been adjusted and optimized yet.
12. Adjust the video parameters to optimize the video display output of the RX unit (Refer to OSD Menu\Video Setting Page section for details).
13. Connect another 3-in-1 KVM combo cable attached in the package to the Receiver (RX PC port 10), and the VGA port and USB port of the RX PC.

7. OPERATION

On the Receiver Unit, the OSD (on-screen display) Menu control is available to facilitate more intuitive operations. Users can configure various settings in the RX unit's OSD Menu:

OSD Menu

Following keys are used to operate the OSD Menu:

Esc: Exit the current page.

⬅➡ Change the value in the selected option with LEFT/RIGHT keys.
⬆⬇ Navigate options of the current page with UP/DOWN keys.

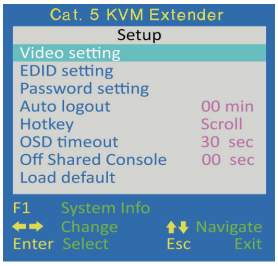
F10: Log out the OSD Menu manually. (Please note that the Logout feature is unavailable as password protection is not enabled).

> Setup Main Page

Below is the Setup Main Page of the OSD menu that appears when you press the following hotkeys: **[Scroll Lock], [Scroll Lock], [Space Bar],** to bring up the OSD Menu.

*Note: The leading two same consecutive keystrokes are defined as the Hotkey Preceding Keys, such as the **[Scroll Lock]** key. There are two methods to change the Hotkey Preceding Key:

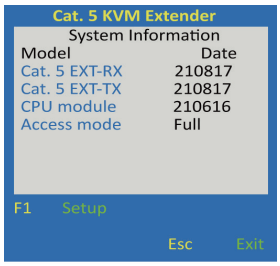
1. OSD Menu\Setup Main Page\Hotkey Option
2. Keyboard Hotkey (Hotkey Preceding Key Change is only available on Receiver Unit)



Setup Main Page

> System Information Page

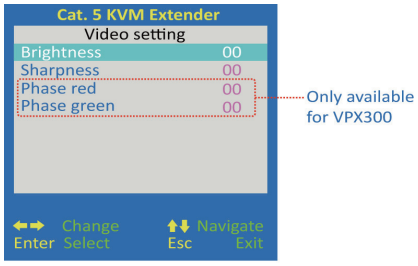
Press the [**F1**] key to view the System Information Page.



System Information Page

> Video Setting Page

On this page, you can configure various video parameters like basic options **Brightness** and **Sharpness** and advanced options like **Phase red** and **Phase green** to optimize the video display results on the monitor of the RX unit located 300 meters away from the TX unit, if neccessary.

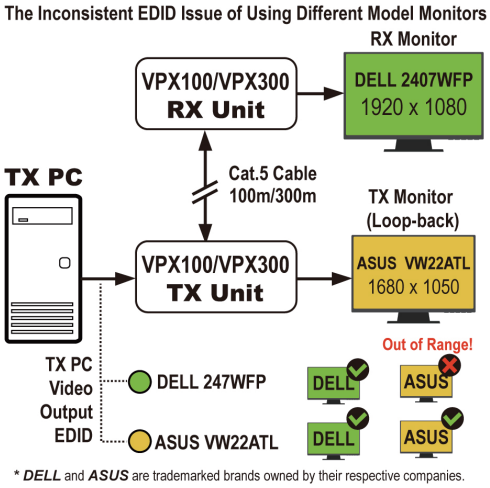


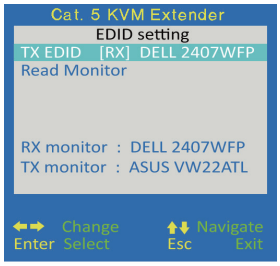
Video Setting Page

> EDID Setting Page

With the TX EDID option on this page, users can select whether to request the TX unit to apply the EDID data from the TX monitor or the RX monitor. This helps resolve issues that may arise due to dierences in resolution between the TX and RX monitors.

To update the EDID data manually, select the Read Monitor option and then press the [**Enter**] key. The updated monitor EDID data of TX/RX units will be listed as below.





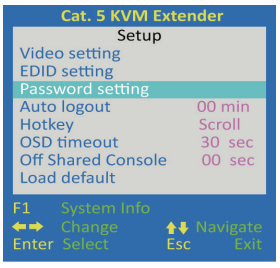
EDID Setting Page

*Note: We highly recommend using two monitors of the same model/ resolution for both TX and RX units to avoid the above illustrated EDID inconsistent issue.

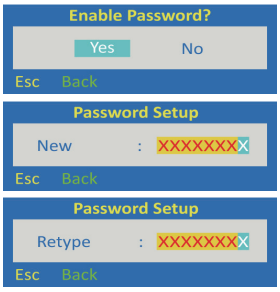
> Password Setting Option/Page

Disable/Enable the **Password Protection** feature. After you manually logout or auto logout with the set timeout, you will be requested to input a password to access the Receiver Console again.

*Note: **PLEASE** ensure that you keep your password secure. Failure to do so may require you to contact your local dealer for technical support.



Password Setting Option



> Auto Logout Option: [0 (Default), 1, 2, 3, 4, 5, 6, 7, 8, 9, 10] Disable/Enable the OSD Logout timeout (0~10min, 0 = Disable). The Auto logout time can be configured from 0 (Disable), right up to 10 minutes. As the password protection is not enabled, the Auto logout will not function.

> Hotkey Option: [Scroll (Default)]

To assign the Hotkey Preceding Key, press to select among [**Scroll**], [**Caps]**, [**Number**] and **[F12**] options to correspond [**Scroll Lock**], [**Caps Lock**], [**Num Lock**], or [**F12**] keys, respectively.

> OSD Timeout Option: [0, 20, 25, 30 (Default), 35, 40, 45, 50, 55, 60] Configure the OSD timeout value, starting at 20 seconds, with an increment of 5, right up to 60 seconds (0 = Disable).

> Off Shared Console Option : [0 (Default), 3, 5, 10, 20, 30] Configure the deadlock timeout value for the Console Control (0 = Disable).

*Note: The Local-site (Transmitter) Console and the Remote-site (Receiver) Console switching engaged priority oers the " **Deadlock Function**". The deadlock function ensures that the priority is given to the first-activated console user who is operating his keyboard/ mouse to control the selected PC. The other (second-activated) console user can only operate his keyboard/mouse once the firstactivated console user has stopped operating his keyboard/mouse for a duration that exceeds the deadlock timeout set here. While the Deadlock Function is enabled, the Transmitter unit's panel LED indicators "Video" and "Control" will flash until the previous console user stops operating his keyboard/mouse for duration that exceeds the deadlock timeout.

*Note: The timeout of the deadlock function will not work when two consoles are not connected to the PCs.

> Load Default Option
Resume the Receiver Unit to factory default settings.

> Change the Hotkey Preceding Key (*Only available on RX Unit)
A keyboard hotkey includes at least 3 or more consecutive keystrokes. The leading two same consecutive keystrokes are defined as the Hotkey Preceding Keys. To change the Hotkey Preceding Key for your keyboard hotkeys, please hit the following hotkey: **[Scroll Lock], [Scroll Lock], [H], [y]**

*Note that **[y]** can be either **[Caps Lock], [F12]** , or **[Num Lock]** key which serves as the new Hotkey Preceding Key to replace the default [Scroll Lock] key.

*Note that this hotkey preceding key change only applies to the Receiver Console and doesn't apply to the Transmitter Console. In addition to change the hotkey preceding key at the Receiver Console, users can also bring up the RX unit's OSD menu to change the Hotkey Preceding Key as instructed in the previous section.

> Select Receiver Console Connection with the Remote-site PC (Receiver end) or the Local-site PC (Transmitter end)
Other than using the RX unit's panel button to select the receiver console connection with the local-site TX PC or the remote-site RX PC, please use the following RX unit exclusive hotkey:

[Scroll Lock], [Scroll Lock], ⬅ or ➡

Using either ⬅ or ➡ both toggles the connection of the Receiver Console from the currently connected PC (remote-site/local-site) to the other PC (local-site/remote-site).

> Remote-site (Receiver) Console Access Mode Control on Localsite (Transmitter) Console

While you are at the Local-site (Transmitter) Console, you can set up the Access Mode of the Remote-site (Receiver) Console by the following TX unit exclusive hotkey:

[**Scroll Lock**], [**Scroll Lock**], [**M**], [**y**]

y = 1 , RX unit Full-access Mode (video, keyboard, and mouse control)

y = 2, RX unit Access-denied Mode (No video; no keyboard, and mouse control)

y = 3, RX unit View-only Mode (only video; no keyboard and mouse control)

When the receiver console access has been denied, the RX's monitor will become black screen and the keyboard and mouse will be locked up. Thus, the hotkey provides a security measure for the Local-site (Transmitter) Console to block/grant access for the Remote-site (Receiver) Console. When the Receiver Console is in View-only Mode, its user can only see the screen without access to his keyboard and mouse.

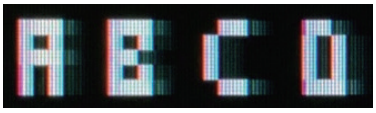
> Optimize the Video Display Result on the Receiver Console
After transmitting the VGA signals over a long distance through a twisted-pair CAT.5 cable from the TX unit to the RX unit, it may be necessary to properly adjust some video parameters such as **Brightness, Sharpness, Phase red**, or **Phase green** to compensate the signal degradation and optimize the signal quality of the video input at RX unit's CAT.5 Extension port.

* Note: **Phase red** and **Phase green** are two video parameters for VPX300 only.

Please follow the procedure below to achieve an optimized video display result on the monitor of your Remote-site Receiver Console:

1. Select a video display content that you believe is appropriate to use as a reference for visual adjustment. This content should ideally integrate both text and graphics, enabling it to serve as a reference for achieving optimized video display result on the RX unit's output. An alternative option could be utilizing the visual testing program provided by the graphics card vendor.
2. Adjust the Brightness and Sharpness: Firstly, bring up the OSD menu by hitting the keyboard hotkey: [**Scroll Lock**], [**Scroll Lock**], [**Space Bar**], and then go to the Video Setting Page. Next, make adjustment to the video input at RX unit's CAT.5 Extension port. The Brightness adjustment can help you tune the picture luminance as a whole to lighter or darker output that best suits your visual perception. The Sharpness is the edge contrast that you will perceive.

(**2a**). **Brightness Adjustment :** The brighter the picture, the more luminance will be added to the picture as a whole.
(**2b**). **Sharpness Adjustment :** Adding more sharpness to the picture helps you distinguish details out of the edges of a line or shape.
(**2c**). **Phase red/Phase green:** When the RGB signal transmission of a VGA connection is not synchronized due to wire length dierences in the CAT.5 cable, a ghosting phenomenon, such as trailing or overlapping colors, may occur (as shown below). Please adjust these two video parameters patiently to minimize or even eliminate the blurring or duplication effect



8. FAQ

Q1: When I connect a monitor to the CAT.5 USB KVM extender, the video doesn't show up. What can I do?
Ans: If you encounter no video or aberrant display problem with a specific monitor, please refer to the operation instruction of the EDID Setting Page, if the problem persists, please contact your local dealer for technical support.

Q2: What should I do if I forget my password to log in to the RX unit OSD menu?
Ans: Please contact your local dealer for prmopt technical support.

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