AN300 KVM extender Quick Installation Guide

Transmitter (TX) Unit

Receiver (RX) Unit

VGA KVM Extender over Cat 5 - VGA, USB & PS/2 with built-in 2 port KVM switch up to 300mtr, Supports 1920 x 1200.

Introduction

The AN300 CAT5 KVM Extender can extend your keyboard monitor and mouse up to 300mtr away from your computer on a single Cat 5 or Cat 6 UTP cable.

The Cat5 KVM Extender comprises two distinct units – the Receiver (RX) Unit and the Transmitter (TX) Unit. The Transmitter includes local console ports and allows a user to access the computer at the local end, while also extending its keyboard, mouse and video up to 300mtr to the Receiver unit at the remote end.

The Receiver Unit has a built-in 2 port KVM switch, and therefore can also be connected to another computer at the Receiver end and perform switching between the remote computer (connected to the TX) and the local computer (connected to the RX).

Applications include remote access of computers or servers for security reasons, factory floors or warehouses not environmentally suited to a computer or point of sale applications where space for a computer is limited. It allows the user to manage and control the computer at both locations together with the capacity of switching between the original computer and a second computer on the Receiver end.

Package Contents

☑ Transmitter (TX) Unit x 1
☑ Receiver (RX) Unit x 1
☑ 3 in 1 VGA/USB/PS2 KVM Cables X 2
☑ USB Type A to Type B Cable for Firmware Upgrade x 1
☑ Power Adapters (DC5V) x 2
☑ This Quick Installation Guide x 1

The front and back panels are where the various connectors are located on the two pieces of the Cat5 KVM Extender. Before you connect these two units to any computer, cabling accessories or peripherals, you should get a glimpse of the main connectors you are going to encounter when setting up the system.

Transmitter (TX) Unit - Front-Panel

Transmitter (TX) Unit – Back-panel

Transmitter Unit (Local End Connection)

(TX – Front Panel)

  a. Power LED (Lit when power is on)
  b. Link LED (Lit when link is on)
  c. USB keyboard connector
  d. USB mouse connector
  e. Select button for Receiver Mode (View only/Full Access/Access Denied)
  f. Video LED (lit when Remote Console monitor is on)
  g. Control LED (Lit when Control of Remote Console is on)

(TX – Back Panel)

  h. Power Jack (DC5V, centre-positive)
  i. CAT5 Extension Port (RJ-45, connected to the Receiver Unit via a CATx UTP cable up to 300mtr max)
  j. Computer port (HD15 VGA, connected to the local computer using included 3 in 1 KVM cable)
  k. Upgrade port (USB type B, dedicated for firmware upgrade)
  l. Console Video port(HD15 VGA, connect to monitor)

Receiver (RX) Unit – Front panel

Receiver (RX) Unit – Back panel

Receiver Unit (Local End Connection)

(RX – Front Panel)

  a. Power LED (Lit when power is on)
  b. Link LED (Lit when link is on)
  c. USB keyboard connector
  d. USB mouse connector
  e. Select button for Local / Remote Computers
  f. Local Computer LED (Lit when local computer active)
  g. Remote Computer LED (Lit when Remote computer active)

(RX – Back Panel)
- h. Power Jack (DC5V, centre-positive)
- i. CAT5 Extension Port (RJ-45, connected to the Receiver Unit via a CATx UTP cable up to 300mtr max)
- j. Computer port (HD15 VGA, connected to the local computer using included 3 in 1 KVM cable)
- k. Upgrade port (USB type B, dedicated for firmware upgrade)
- l. Console Video port(HD15 VGA, connect to monitor)

Installation

Before you install the two pieces of the CAT5 KVM Extender, you should have these items on the checklist ready:

1. The computer for extension should be one with either PS/2 or USB interfaces.
2. Prepare 1 or 2 sets of keyboard, mouse, monitor - 1 set for console 1 (on the TX unit) and the other set for console 2 (on the RX unit).
3. If using a monitor on both sides, the two monitors used (one on the TX side and the other on the RX side) for display should be of the same native resolution to ensure maximum compatibility.
4. You should use standard keyboard and mice, since the CAT5 KVM extender supports only standard 5 button mice and keyboard. Any more advanced mouse/keyboard function may or may not be supported by this CAT5 KVM extender.
5. Use good quality CATx UTP cable (max. 300mtr). Note that good quality cable will give better video outcome over a longer distance.
6. Any cabling distance longer than 300mtr will experience more signal degradation. However, good quality cable can reach even beyond the maximum 300mtr with satisfactory results.
7. The choice of path of the CATx UTP cable should not only take into account the shortest possible path, but also one that is relatively far away from any significant electromagnetic interference source.

Plan the layout path and deploy the UTP cable for extension

Step 1. Plan the path through which the CATx UTP 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 possible length consideration, but also on the least electromagnetic interference.
Step 2. Lay out the UTP cable according to your planned path.

Configure the Transmitter Console

Step 3. Connect one end of the CATx UTP cable to the CAT5 Extension port of the Transmitter. (connector **i**)
Step 4. Connect the power adapter to the Transmitter to power it up before connecting any computer or cables to it. (connector **h**)
Step5. Connect the computer to the Transmitter using the included 3-in-1 KVM cable (connector **j**)
Step 6. Connect a USB keyboard, USB mouse & VGA monitor to the Console ports (connectors **c, d, and l**).
Step 7. Power on the computer, and check the keyboard, mouse & video are working before you proceed to the next steps.

Configure the Receiver Console

Step 8. Connect the other end of the CATx UTP cable to the CAT5 Extension port of the Receiver (connector **9**).
Step 9. Connect the power adapter to the Receiver to power it up before connecting any devices to it. (connector **8**)
Step 10. Set up Console 2: Connect a USB keyboard, USB mouse & VGA monitor to the Receiver's Console ports (connectors **3, 4 and 12**).
Step 11. Check the keyboard, mouse & video on Console 2 are working.
Step 12. Adjust the video parameters to optimize the display output (Refer to OSD Menu/Video section for details).
Step 13. You can connect a second computer to the Receiver if needed: Connect the computer to the computer port using the included 3-in-1 KVM cable (connector **10**)

CAT5 KVM Extender Configuration Diagram

OSD Menu

The OSD Menu control is available only on the RX unit. To invoke the OSD Menu, you should hit the following hotkeys:

Default Hotkey = [SCROLL] + [SCROLL] + [SPACE]

To navigate the OSD Menu, just use the following keys
      Esc: Exit,
      ← → Left/Right cursor: change value in the menu option
      ↑↓ Up/Down Cursor: Navigate.
      F10: Logout the OSD Menu (However, if the password protection is not enabled, the Logout feature will not be available)

OSD Main page

This is the OSD Main Menu and is the first page you will see when you hit the keyboard hotkey [SCROLL] + [SCROLL] + [SPACE]

Main Menu

Press F1 for System information OSD Menu

System Information Menu

Video Setting

Configure the video settings such as Brightness, Sharpness and skew compensation for Phase Red and Phase Green.

Video Setting Menu

Brightness: [0 ~ 63]
Adjust the Brightness of the Display on Receiver Console.

Sharpness: [0 ~ 63]
Adjust the Sharpness of the Display on Receiver Console.

Phase Red: [-31 ~ +31] specify the time delay for red colour.

Phase Green: [-31 ~ +31] specify the time delay for green colour. The blue component colour is adjusted automatically in proportion to the red and green. Users have no need to adjust the blue colour themselves. For a more detailed explanation of how to adjust your video display parameters on the remote console, please refer to next section, Optimize the Video Display on the Remote Console.

EDID Setting

EDID Setting Menu

TX EDID
You can select the TX EDID emulation data set to adopt – either that of the monitor on the RX or the monitor on the TX unit. You can use the Left / Right Arrow key to select. However, before you can make the selection for the first time, you might need to read the monitor EDID information by the Read Monitor option below.

Read Monitor
Reads the EDID configuration data from the monitors on the TX and the RX & stores it for use for the EDID emulation on the TX unit.

Password Setting
Disable / Enable the password protection feature. If enabled, after you log out or the Auto logout has timed out, you will be prompted for the correct password before you can access the console again.

Password Setting Menu
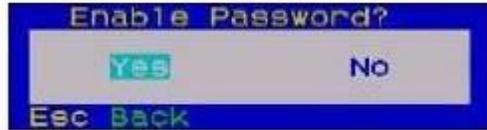
Auto Logout: [0 ~ 10]
Disable / Enable the Logout timeout (0~10min, 0 = Disable). The Auto logout time can be configured from 0 (Disable), with an increment of 1, right up to 10 min. If the password protection is not enabled, the Auto logout will not be available for use.

Hotkey: [Default is [SCROLL LOCK] + [SCROLL LOCK]
To change the preceding sequence hotkey, press← → to select your new hotkey - CAPS, F12 or NUM.

OSD Timeout: [0~60]
Configure the OSD timeout value (0, 20~…30~…60), with an increment of 5 seconds, (0 = Disable).

Off Shared Console
Configured the Shared Console Control (Disable/Enable or adjust the timeout value (0~30 seconds, 0= Disable) If enabled, this function will lock control to the current user (either on the TX or RX) until there is no activity for the timeout period. It will then release control and the other user can gain access. When this function is enabled, the Transmitter's LED's "Video" & "Control" will flash, until the timeout period has expired.

Load Default
Load the factory default settings.

HOTKEYS AVAILABLE ON THE RECEIVER CONSOLE

Switch between Local/Remote Computer using Keyboard Hotkey (on Receiver console only)

In addition to using the switching button on the front panel of the Receiver to switch between the 1st and 2nd computer, you can also use the keyboard hotkey:

Hotkey sequence = [SCROLL] + [SCROLL] + (y) (y) = ←, →

(y) = ← , Local (2nd computer)
(y) = → , Remote (1st Computer)

Change the Hotkey Preceding Sequence using Keyboard Hotkey instead of OSD Menu (on Receiver console only)

To change the hotkey preceding sequence of your hotkeys, please hit the following key commands from the keyboard on the RX unit.

Hotkey sequence = [SCROLL] + [SCROLL] + H + (y)

(y) = SCROLL, CAPS, F12 or NUM

Note that the hotkey preceding sequence setting on the RX Console will also change the hotkey preceding sequence on the TX Console.

HOTKEYS AVAILABLE ON THE TRANSMITER CONSOLE

Change the Remote Console ON/OFF/View Only mode (on Transmitter console only)

While you are at the Transmitter Console, you can turn Remote Console On/Off or make it View Only by the following:

Hotkey sequence = [SCROLL] + [SCROLL] + M + (y)

(y) = 1, 2, 3

(y) = 1, Full access (keyboard, mouse and video)
(y) = 2, Access Denied (no keyboard or mouse and blank screen)
(y) = 3, View only (only video, no keyboard or mouse control)

When the remote console is turned OFF, the video screen will become blank and the keyboard and mouse will be disabled. When the remote console is in View Only Mode, the user can only see the screen while access to keyboard and mouse control are not available.

Optimize the Video Display on the Remote Console

To achieve an optimized display output on the remote console (i.e. the Receiver) you will need to adjust the various video parameters such as Brightness and Sharpness in an optimized combination
that gives you the best video display.

Please follow the procedure below to achieve an optimized display output on your remote console screen (on RX unit):

Step 1. Choose a video display content that you think will be suitable to serve as a reference for the visual adjustment. You can choose a document that integrates texts and graphics so that you can use it as a reference to achieve an optimized video display for either textual or graphical content on the Receiver video output. One alternative can be the visual testing program provided by the display card vendor.

Step 2. Adjust the Brightness and Sharpness - First, invoke the OSD menu by hitting the hotkey, SCROLL + SCROLL + Space, then go to the Video Setting submenu. Next, adjust your video display for an optimized output. The Brightness adjustment can help you to 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.

Adjust the Brightness: The brighter the picture, the more luminance will be added to the picture as a whole.

Adjust the Sharpness: To add more sharpness to the picture is to help you distinguish more detail out of the edges of a line or

shape.

When you have adjusted the Brightness and Sharpness to achieve your desired level, you can then move on to adjusting the Red Delay and Green Delay to achieve your optimized video output.

Step 3. Adjust the Red Delay and Green Delay: the Red, Green and Blue are the primary colors that constitute our color perception scheme on the monitor.

The CAT5 extender uses different wires in the UTP cable to carry the signals of different primary colors. The different wires in the twisted-paired cable are all slightly different overall lengths and the longer the CATx cable, the greater the difference in length between wires.

This difference in length causes the red, green and blue colours to become out of sync. You will need to adjust the delay time for certain colour signals on certain wires to make the three colour signals arrive into the display in good sync.

The CAT5 KVM Extender requires you to manually adjust only the Red delay and the Green delay - the Blue delay is automatically tuned and optimized by the machine according to the other concurrent video parameters.

The values of the Red delay and the Green delay will be limited within a preset difference range. This means, whenever you try to adjust either the value of the Red delay or the Green delay to be outside of the allowable preset difference range as compared to the value of the other colour delay, the other colour delay will be automatically adjusted to be within the difference range to prevent the video from being perceptibly disoriented.

With the Blue delay automatically tuned in relation to the other colours and the Red and Green delays limited within a comfortable difference range, the AN300 CAT5 KVM extender facilitates an easier and more intuitive way for video optimization.

No Video Troubleshooting

Q. When I connect a monitor to the CAT5 KVM extender, it does not display any video.

A. If you encounter no video or other display problems with a specific monitor, you should try to copy the EDID information from the smaller monitor among the local monitor and the remote monitor to see if this can eliminate the display problem.

FCC: This equipment has been tested and found to comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference
(2) This device must accept any interference received. Including interference that may cause undesired operation.

CE: This equipment is in compliance with the requirements of the following regulations: EN 55 022: CLASS B.

C-Tick: This equipment is in compliance with ACMA's Electromagnetic Compatibility (EMC) regulatory arrangements under the Radiocommunications Act 1992.

RoHS: All contents of this package, including products, packing materials and documentation comply with RoHS.