

**K304104M-15**

**CAT 5 KVM Extender Kit for  
Single PC, Multiple Access**

Installation and Operation Manual

## Introduction

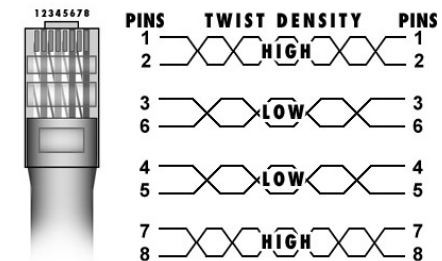
The K304104M KVM Extender Kit is perfect for any type of installation where the console needs to be in a conveniently accessible location, but the computer system to reside in a long distance place - away from dust, and harsh environmental influences.

When used with the BE-104M KVM Transmitter, you can connect up to 4 BE-6304M-150 KVM Console Receivers and allow 4 different consoles to access and control a remote computer system up to 150 meters (500 feet).

## Specifications

- UTP maximum cable length:  
BE-6304M-150: 150 meters (500 feet)
- UTP Cable type: CAT5/CAT5e/CAT6
- UTP connector standard: EIA/TIA
- Console keyboard and mouse: USB
- Video resolution: max. 1920 x 1200 @ 60Hz depending on cable quality and VGA signal.
- DDC/EDID: DDC2B
- Console power supply: External 5 VDC power adapter **Pins and pairing.**

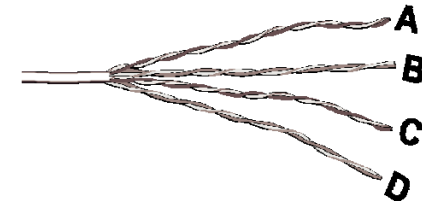
Make sure the UTP cable pin assignments are correct: straight through pin-to-pin, with pairing as follows.



### **Twist density :**

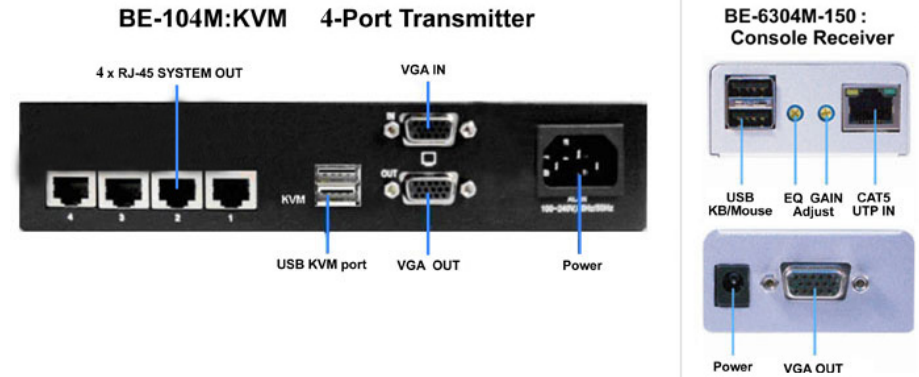
UTP cable pairs have different twist densities (twist pitches), which can be seen by stripping off about 10 cm (4 in.) of insulation. Wire colors vary by manufacturer, do not depend on colors to guess twist densities; strip a section and inspect.

The ABCD picture shows typical UTP cable, with pairs A and C having high pitch twist, and B and D having low. Most cables have two high density pairs; some have three. Assign high density twists by priority to pin pairs 1-2, 7-8, and 4-5; assign low density twists to pin pairs, by priority, 3-6 and 4-5. Failure to assign correct twist densities may result in image jitter.



### **Packing List**

- (1) x BE-104M KVM Transmitter
  - (1) x **BE-6304M-150** Console Receiver
  - (2) x DC 5V Power Adapter
  - (1) x Small Phillips Screwdriver
  - (1) x This Installation and Operation Manual
- If anything is missing or damaged, please contact your dealer.



## Installation

1. Connect the console USB keyboard and mouse to the appropriate BE-6304M-150 connectors. Connect the console monitor to the BE-6304M-150 VGA out connector.
2. Connect the BE-104M Transmitter unit to the remote PC:
  - a. The [VGA IN] port of BE-104M connects to PC VGA port.
  - b. The USB [KVM] port of BE-104M connects to PC USB port.
  - c. The [VGA OUT] port connects to a local monitor, if necessary.
3. Connect a length of CAT5 (or CAT5e or CAT6) UTP cable, not exceeding the maximum permitted length, between BE-6304M-150 CAT5 UTP IN port and the 4 x RJ-45 System OUT ports of BE-104M.
4. Plug in the power adapter and connect it to BE-6304M-150 Power connector. Power on the BE-104M Transmitter. The BE-6304M-150 Receivers poll the network, detects the Transmitter, and starts service. Go to Image Tuning.

## ID Seting

1. After about installation, you should set ID for each BE-6304M-150 console receivers.
2. Press <Scroll Lock> three times in quick succession. The three LEDs above the keypad blink to show you are in ID Set Mode. Please

press the number key 1~8 of the keypad, and press <Enter> to set the ID for the connected BE-6304M-150. For example: If you press key [1], it means the ID of the BE-6304M-150 which you connected is set to No "1".

2. Repeat above processing for other BE-6304M-150 receivers. Please note each receiver must have a unique ID number.

### **ID number checking**

After ID setup of each connected BE-6304M-150, you can press <Scroll Lock> three times in quick succession to check its ID number.

The three LEDS of keypads shows ID number:

- ○ ● (ID 1)
- ● ○ (ID 2)
- ● ● (ID 3)
- ○ ○ (ID 4)
- ○ ● (ID 5)
- ● ○ (ID 6)
- ● ● (ID 7) **Blinking quickly**
- ● ● (ID 8) **Blinking slowly**

### **Image Tuning**

During original installation, or any time the length of the CAT5/5e/6 UTP cable is changed, do the following:

1. **Adjust EQ and Gain.** While displaying a remote screen on the monitor, insert the small Phillips screwdriver (supplied) into the left hole (closer to the mouse/KB connectors) of BE-6304M-150. While looking at the VGA monitor, rotate gently till the best EQ setting (think image focus) is achieved. Then insert the screwdriver into the right hole (closer to RJ-45 port), and rotate gently till the best Gain setting (think brightness) is achieved. The Receiver retains the adjustments.



## DDC2B: Automatic Display Settings

The CAT5 KVM family of Transmitters and the Console Receivers support the DDC2B/EDID protocol; this enables DDC2B-capable monitors and graphics cards to automatically set compatible resolutions and refresh rates. This is especially helpful for LCD monitors. To take advantage of the DDC2B capability, the main point is to turn the KVM equipment on in the correct order.

When the KVM Transmitter powers on, it checks for a local monitor. If a local monitor is connected and ON, the Transmitter stores the local monitor DDC2B information, and **emulates the local monitor**.

If there is no local monitor, or if the local monitor is off, the Transmitter will normally revert to its default information, which is that of the Remote Console monitor; in this case the Transmitter **emulates the remote monitor**.

**When the BE-630x, with attached monitor ON, powers on, it sends that monitor information to the Transmitter, overwriting any previous DDC2B information. In this case the Transmitter emulates the remote monitor.**

## **Trouble Shooting**

### **Problem: No video**

- 1) Make sure all cables and connectors are securely plugged into their appropriate ports.
- 2) Make sure that the Console monitor supports the server (controlled PC) transmitted resolution and refresh rates.
- 3) Make sure the CAT5 cable pin assignments are correct.
- 4) If some or all remote PCs are not detected, make sure that they have all booted up, and that their Transmitters are properly connected and powered on. Double press your designated hotkey so that the Console Receiver will re-poll the network.

### **Problem: Weird Video**

- 1) Watch out for resolution and refresh rates set by DDC2B. If you have unmatched monitors connected to a local console and a remote console, it is possible that the server VGA adapter is feeding a signal that does not agree with the monitor you are viewing. Please see the section on DDC2B Automatic Display Settings.

### **Problem: Image jitter**

- 1) With particular attention to twist density (q.v., above), check twisted pairs assignments.