

CAT5 Module

User's Manual

Rev 1.0

Table of Contents

Table of Contents	I
1. Introduction	1
1.1 Feature	2
1.2 Package Contents	3
1.3 Technical Specifications	4
1.4 Cable Diagrams	6
2. Installation.....	7
2.1 T-Dongle Installation.....	7
2.2 R-Box Installation.....	8
3. Hotkey.....	10
4. OSD (On Screen Display) on R-Box.....	11
4.1 T-Module + R-Box	11
4.2 T-Dongle + R-Box.....	11
5. Troubleshooting	14
6. Certifications	15

1. Introduction

The R-Box enables user to access the PC, server or KVM switch up to 1000 feet (300 meters) away with superior auto-adjust RGB gain/delay control capability.

There are two types of R-Box:

- CAT5 Transmitter (T-Dongle) + CAT5 Receiver (R-Box)
- CAT5 Transmitter Module (inserted into KVM Switch) + CAT5 Receiver (R-Box)

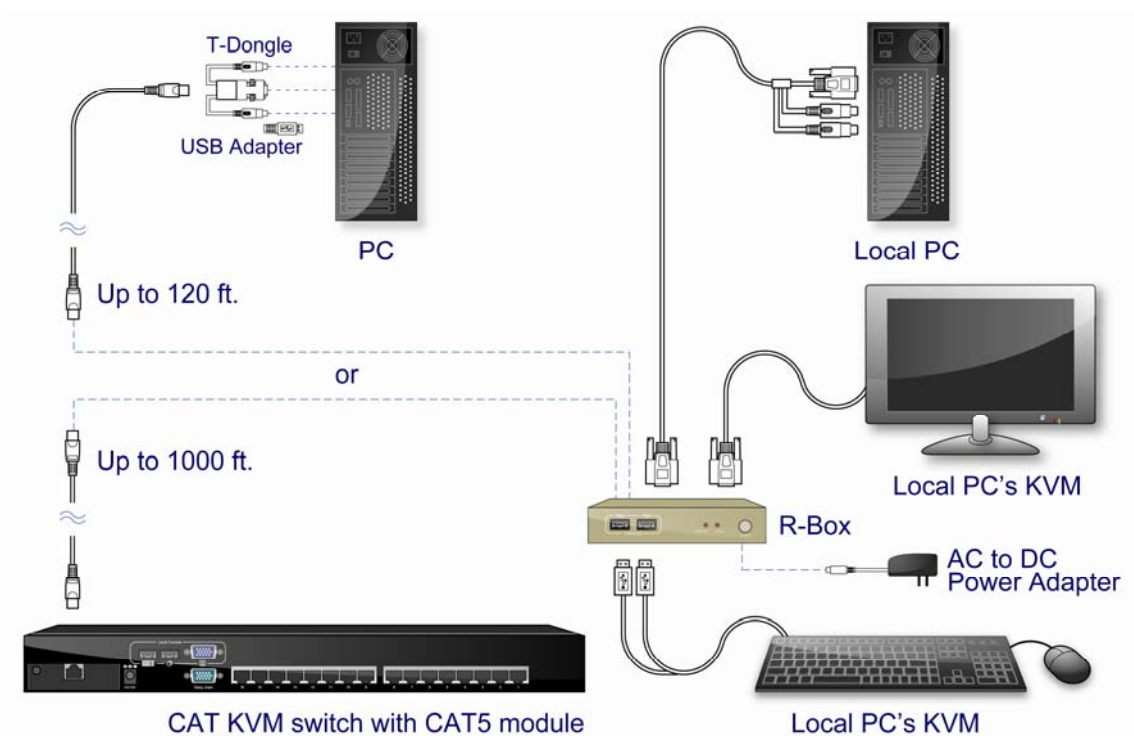


Figure 1-1. Application

The R-Box is a pair of devices for high-density applications where you want full use of keyboards, mouse, and monitor, but there is no room for a server nearby. Or for applications where you want to put all PC's in a safe place, all the users only have keyboard/mouse and monitor on their desk.

The T-dongle is able to move your console, keyboard, Mouse, and Monitor, to a suitable control field conveniently over existing network construction. You just need install a pair of extender T-dongle and R-Box into local side and remote side individually. It also saves your cable layout and cable installation cost.

The R-Box is a dual functions device that uses Cat5 cable to extend your keyboard, mouse and monitor 1000 feet (300 m) from a computer or KVM switch, it also has built-in 2-to-1 OSD KVM switch used the same peripheral for your local PC.

R-Box allows you to control remote PC or computer system 1000 feet away while working on local PC. This makes R-Box an excellent solution for double your productivity in any applications: Banking applications: Teller can control an ATM machine while stay on counter for banking service. Manufacturing applications – Engineers can work on next design while monitor the current design on the field test.

1.1 Feature

- A single, inexpensive CAT5/5e/6 UTP cable replaces bulky KVM cables
- Enables user to access the computer, server or KVM switch up to 1000 feet (300 meters) away with superior auto-adjust RGB gain/delay control capability
- Collocate computers and servers on one location, Ideal for hazardous or unsecured environments
- Build in 2-to-1 KVM switch with OSD (On-Screen Display) function
- Switches PCs by push button or keyboard “Hot Key” commands
- Configurable Programmable Hotkeys
- User name and Password protection
- Audible feedback when switching
- LED indicators for computer status and data transmission
- 3-in-1 space saving design
- Work with PC with PS2 port or PC with USB port
- Easy to install and use with plug-and-play functionality.

1.2 Package Contents

Transmitter Unit (dongle or Module)	1 PCS
Receiver Unit (R-Box or R-Box professional)	1 PCS
CD-ROM (User manual, QSG)	1 PCS
AC to DC Power Adapter	1 PCS

Table 1-1. Package Contents

1.3 Technical Specifications

R-Box R-Box Enhanced	
Function	Feature
USB connector	2 USB connectors for keyboard and mouse Note: PS2 keyboard and mouse user needs a PS2 to USB adapter.
VGA connector	2 HDDB15 connectors, one for VGA monitor port, one for Connect 3-in-1 KVM cables to local PC
RJ45	Connect CAT5 cable to remote PC or KVM system
LED's	2 (Local and Remote indicators)
Port selection	On Screen Display (OSD) Menu, Hot Key, Push Button
Hotkey	Programmable
OSD	User Name, Password, Hot key selection.
Keyboard Emulation	PS/2 or USB
Mouse Emulation	PS/2 or USB
VGA Resolution	1680 x 1050 (500 feet) (R-Box) 1280 x 1024 (1000 feet) (R-Box Enhanced)
Housing	Metal
Power Adapter	DC 9V, 500 mA
Operation Temperature	0 ~ 50°C
Storage Temperature	-20 ~ 60°C
Humidity	0~80 %, Non-Condensing
Weight	370 g
Dimension (mm)	160 x 70 x 25

Table 1-2. R-box Specifications

T-Dongle (Transmitter)	
Function	Feature
PS/2 keyboard connector	1
PS/2 mouse connector	1 (no use for USB computer)
VGA connector	1 (plug on PC directly, no extra cable needed)
PS/2 (keyboard) to USB adapter (option)	1 (one serves both keyboard and mouse)
RJ-45	1 for CAT 5 cables
LED	1
Weight	80 g
Dimension (mm)	85(L) x 30(W) x 20 (H)

Table 1-3. T-Dongle Specifications

1.4 Cable Diagrams

3-in-1 DB15 Cable

HDDDB15 male to one HDDDB15 male plus two mini din 6-pin PS/2 connectors.



Figure 1-2. 3-in-1 DB15 Cable

3-in-1 CAT5 Transmitter (T-Dongle)

RJ45 female to one HDDDB15 male plus two mini din 6-pin special cables

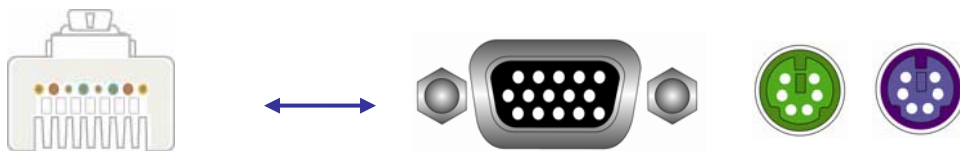


Figure 1-3. 3-in-1 CAT5 Transmitter (T-Dongle)

PS/2 keyboard to USB adapter

PS/2 keyboard to USB keyboard and mouse due HID adapter

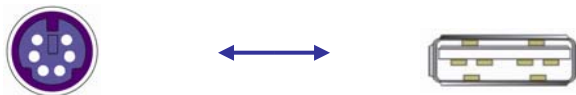


Figure 1-4. PS/2 keyboard to USB adapter

CAT5/5E/6 Straight Through UTP/STP Cable

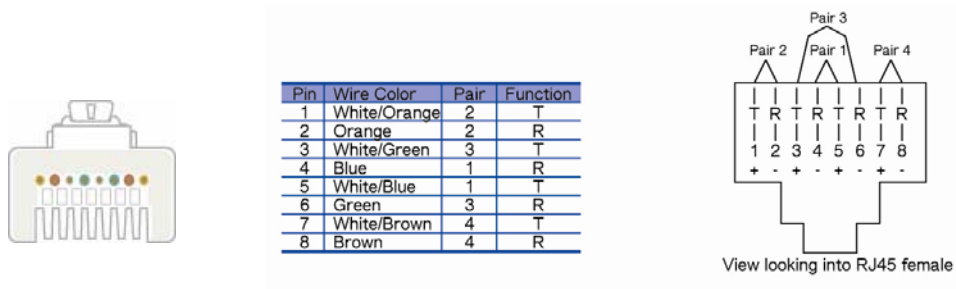


Figure 1-5. CAT5/5E/6 Straight Through UTP/STP Cable (8P8C)

2. Installation

2.1 T-Dongle Installation

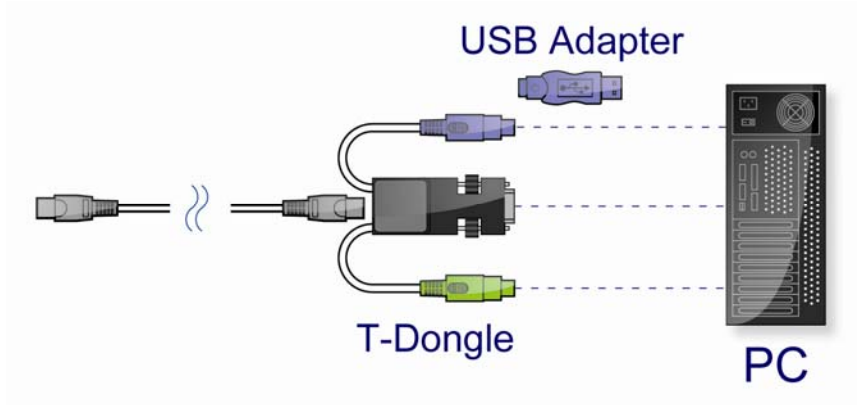


Figure 2-1. T-Dongle

Step 1

Plug in VGA connector to the PC VGA port.

Step 2

Keyboard, Mouse

PC with PS/2 ports

- Plug in mouse connector to PS/2 mouse port, keyboard connector to PC keyboard port.
- PS/2 keyboard and PS/2 mouse is not design for hot plug

PC without PS/2 port

- Plug in USB connector to PC USB port (with PS/2 keyboard to USB adaptor)
- The single USB port can communicate both keyboard and mouse signal, it work as a standard HID (Human Interface Device), no extra driver needed.
- Please wait for PC bus emulations

Step 3

Connect one end of the CAT5 cable to RJ-45 port of T-dongle, and the other end of the CAT5 cable to the RJ-45 port of R-Box or Host port of a KVM Switch.

2.2 R-Box Installation

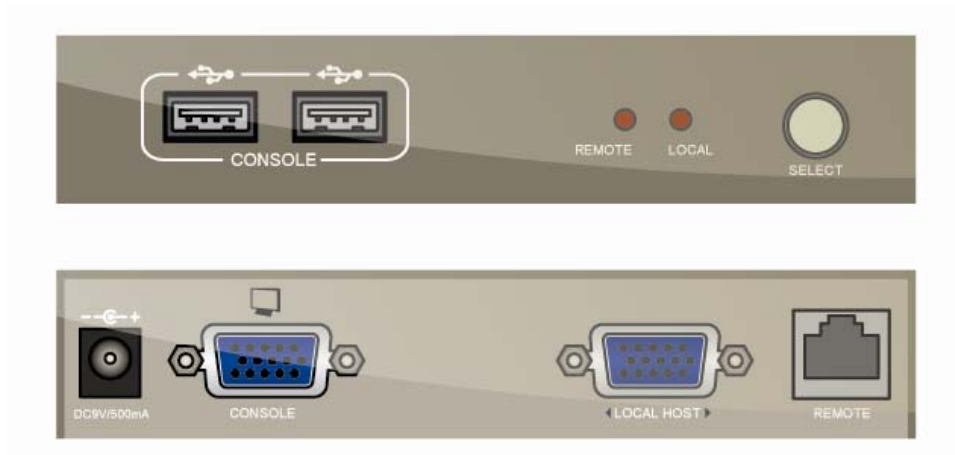


Figure 2-2. Front/Back Panels

Step 1

Connect keyboard, mouse, and monitor to the R-Box

Step 2

Connect the local PC: Connect R-Box and local PC with 3-in-1 DB15 KVM switch cable.

Step 3

Connect the remote PC or KVM switch: Connect one end of the CAT5 cable to RJ-45 port of R-Box, and the other end of the CAT5 cable to the RJ-45 port of T-dongle or CAT5 Console of a KVM Switch.

Step 4

Power on the monitor, power on the R-Box by plug in power adapter, the OSD Login screen will show up waiting for user name and password.

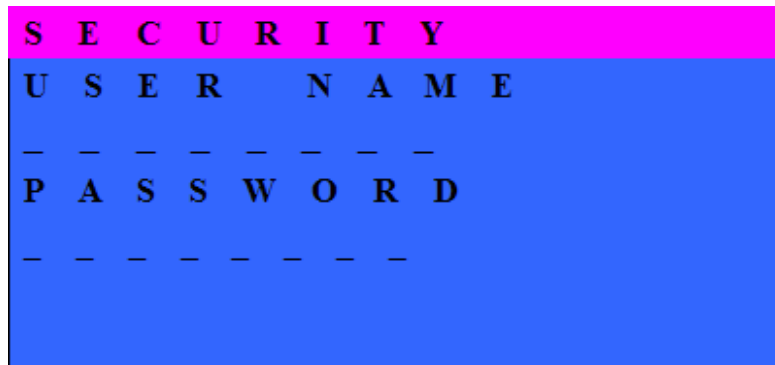


Figure 2-3. Login Window

The Default User Name is eight zeros –“00000000”.

The Default Password is eight zeros –“00000000”.

3. Hotkey

You can conveniently command R-Box through a simple hot key sequence. To send commands to the R-Box, you must **press the hotkey (default Caps Lock) twice within 2 seconds**. You will hear a beep sound confirming entering Hotkey mode. Then you have to **enter Command in 2 seconds**. If you do not press any key during Hotkey mode over 2 seconds the Hotkey mode will be escaped and back to Normal state.

The default hotkey is **Caps Lock** but you can change hotkey as your application convenience. If you prefer to use other hotkey, please go to OSD menu and change the default hotkey to the other.

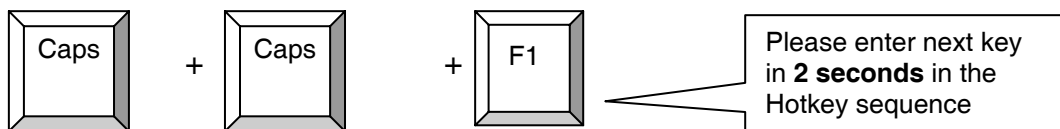


Figure 3-1. Hotkey

The table below lists all supported hotkey commands.

Command	Function
F1	To show "Help" OSD window
F2	To show "Hotkey" OSD window
F3	To "Revise" user name and password in OSD window
F4	To log out the OSD , and show up the Login window waiting for username and password.
C	Toggle switch between Local and Remote ports
Q	Turn beep sound on/off
S	To activate the Auto-Scan function. Auto-scan Remote and Local port every 5 seconds repeatedly.
A	Auto-adjust video signal to optimum

Table 3-1. Hotkey Function

4. OSD (On Screen Display) on R-Box

OSD Menu provides a menu-driven interface to control the R-Box switch.

4.1 T-Module + R-Box

Under this application the R-Box OSD function is limited to Hotkey OSD windows (not support F3 and F4), since the connected KVM switch has its own OSD system.

When press the hotkey twice, then press **F1**, the Help window will show up.



Figure 4-1. Login Window

4.2 T-Dongle + R-Box

When power on the R-Box, the Login window will show up, and waiting for user name and password.



Figure 4-2. Login Window

The default user name is eight zeros "00000000".

The default password is eight zeros "00000000".

In Login window, you can reset user name and password to default setting by press and hold the SELECT button and press ESC key.

After login or port switch by panel button, OSD or Hotkey, the **Status** screen will show up to display the information of current settings – remote or local console, and current Hotkey type. Pressing any key or clicking the mouse will let the Status screen disappeared.

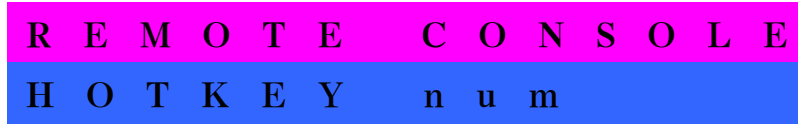


Figure 4-3. Login Window

OR

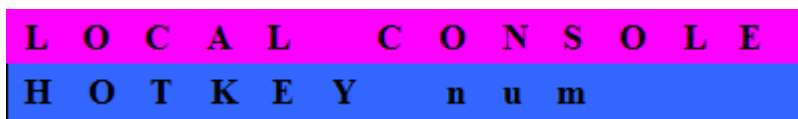


Figure 4-4. Login Window

When press the hotkey twice, then press **F1**, the window below will show up.

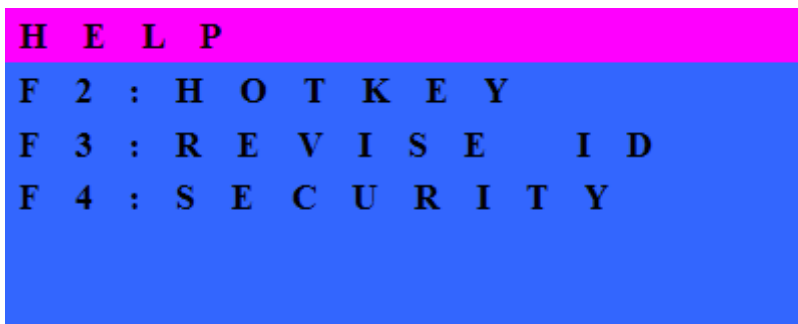


Figure 4-5. Login Window

When press the hotkey twice, then press **F2**, the window below will show up.



Figure 4-6. Login Window

When press the hotkey twice, then press **F3**, the window below will show up.

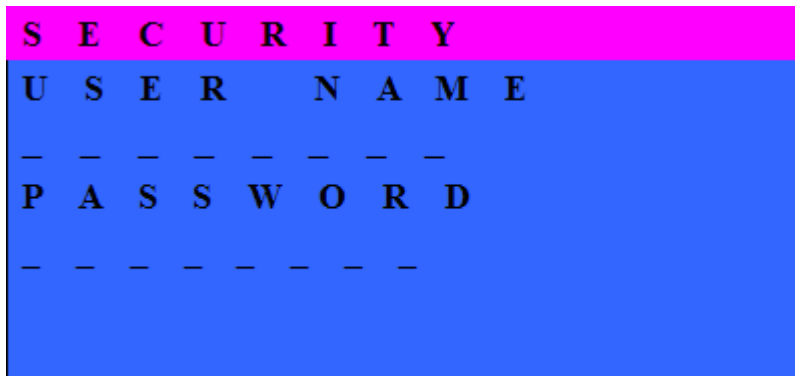


Figure 4-7. Login Window

Key in the current user name and password, the window below will show up.

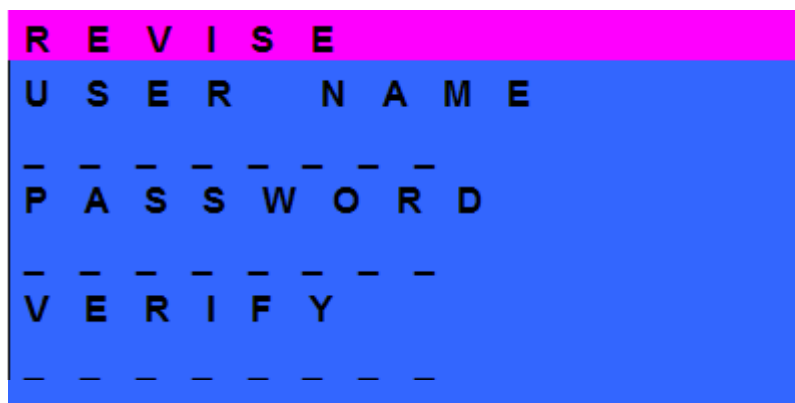


Figure 4-8. Login Window

Key in the new user name and password, and password again in Verify field to complete the change. The maximum length of NAME and PASSWORD is eight characters (A~Z and 0~9).

5. Troubleshooting

1. Receiver power LED is not ON
 - Make sure the power adapter is connected to KVM CAT5 receiver.
2. The computer VGA resolution mismatches with the monitor's supporting resolution
 - Please notice the R-Box support DDC function, but it does not support monitor hot plug. If hot plug the monitor may cause this problem.
 - When you want to change the monitor, please power off the R-Box firstly, connect the new monitor to the R-Box, power on the monitor, finally power on the R-Box, so R-Box can detect the monitor settings and pass the settings to the computer.
3. No video signal is displayed on the monitor.
 - Please check if all connectors are connected properly
 - VGA cable was not attached to computer during boot up process.
 - Power adapter is not connected to the receiver.
4. Video signal is foggy or un-cleared on the screen
 - Please check VGA connector
 - The resolution is too high for the length of cable being used.
 - If the problem happened at VGA resolution, shorten the CAT5 cable length or reduce VGA resolution.
 - It is highly recommended to use "optimal CAT5 cable length" to get the best video quality and don't waste unnecessary CAT5 cable.
5. There is the error message "keyboard or Mouse not found" on the screen or keyboard mouse not function.
 - PS/2-PC --- keyboard mouse are not hot pluggable, please make sure PS/2 cable are well connected then reboot.
 - USB PC ---- please unplug and plug in the USB connector then wait for USB bus emulations or run the device detection function on the windows control panel .

6. Certifications

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. Include interference that may cause undesired operation.

CE

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

RoHS

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



CAT5 Module

