

# 8/16-Port Combo KVM Switch

KV-CC0801-0B  
KV-CC1601-0B

## User Manual

◀ V1.0 ▶



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## 1. Introduction

This two console 8/16 ports Combo KVM (Keyboard, Video and Mouse) Switch allows multiple 8/16 ports computers (PCs or servers) respectively with PS2 or USB interface controlled by one set of PS2/USB keyboard, monitor and PS2/USB mouse. No matter what kind of PC such as PS2 PC, USB PC, MAC or SUN Microsystems with USB interface, there are two interface could be linked between this KVM switch and the comprehensive computers or servers.

Two-console Combo KVM switch is able to work with the same brand of single console KVM switch with legacy PS2 & USB console interface. It is highly recommended to put Two-console Combo KVM switch at master bank and the 2<sup>nd</sup> KVM switch or the following KVM switches would be located at slave bank.

It ensures easy switch by front panel button, Hot-keys or the friendly On Screen Display (OSD) menu with connection up to 128 computers (by chaining 16-port Combo KVMs ). Not only naming for each computer can be done for easy identification, it also protects access by passwords. Additionally with the Auto Scan function it helps you managing all connecting systems at ease.

The CAT-5-Based remote console port of this KVM switch to locate your keyboard, mouse and monitor up to 150 meters away KVM switch. This KVM switch is built with a CAT-5 receiver inside of PC port. It synthesizes keyboard/mouse signal and VGA monitor signal for being easily transmitted to a long distance over popular LAN CAT-5 cable.

The IP-Based remote console port of KVM switch support TCP/IP protocol and intranet or internet access from remote client user.

### Why use a Combo KVM Switch?

— Saves money, time, spaces and energy.

1. Saves money – With only one set of PS2/USB keyboard, monitor and PS2/USB mouse you can manage multiple systems. This greatly reduces the cost of implementing hardware for each computer and system administrator to handle the installation.
2. Saves time – Improved server uptime and completely centralized control to save your time traveling between every computer.
3. Saves space – As only one set of PS2/USB keyboard, monitor and PS2/USB mouse is required to manage all computers and reduced cable clutter, no need to worry about extra spaces for each system. You may utilize the space for future use.
4. Saves energy – As number of PS2/USB keyboard, monitor and PS2/USB mouse is greatly reduced, the electricity burden caused by each hardware is also reduced.

### ■ Where should need a Combo KVM?

Many computers in server room, which are expected to reduce cost, easy maintenance and control computer systems efficiently, Combo KVM can be the best solution. Following list is some of the example where Combo KVM can be implemented.

1. SOHO, small to medium offices.
2. Organization's server management centre.
3. Hardware/software experiment and system coalition.
4. PC production quality test.
5. Industrial rack application.
6. Customer's service centre.

ISP (Internet Service Provider), ASP (Application Service Provider, IDC(Internet Data Center).. etc. Global information system centre.

## 2 console 8 ports Combo KVM Switch



## 2 console 16 ports Combo KVM Switch



&lt;Figure .1&gt; KVM Switch Diagram

This 2 console is designed as one control double view, both local console and remote console can access and view the server but only single control at a time, One console can operate on the KVM switch and server at both console display the same result. The change of the control as follow after 2 seconds (longer if their is IP internet delay) no keyboard and mouse input any console (remote or local) can take over the control and switch the KVM or operate on server another console can view the same display.

## 1.1 Main Features

- Support combo interface for connecting to PC ports conveniently.
- Support one local console or plus optional one remote console (CAT-5 or IP).
- Very High Video Quality, DDC2B.
- Plug-and-Play monitor support.
- Software free, easy installation, fully plug-and-play design.
- Firmware upgradable and easy maintenance.
- 8/16 ports one-Console Combo KVM switch is 19" rack mount size design.
- The maximum CAT-5 cable length between PC and this Combo KVM switch is 150 meters.
- Support Microsoft Intellimouse, Microsoft Intellimouse Explorer, Logitech Net Mouse or the other fully compatible MS mice.
- Support DOS, Win3.X, Win95/98/98SE/2000/ME/XP, WinNT, Netware, Unix, Linux.
- Support iMAC, Power MAC and Sun Microsystems with USB port.
- Very High Video Quality of local console - Up To 1920X1440.
- Easy PC selection via On Screen Display (OSD) Menu, Push Buttons, Hot Keys.
- Support two layers password security protection and search PC server name.
- Auto Scan Mode for monitoring PCs and flexible Scan time from 005~255 seconds.
- Keyboard status restored when switching PCs.
- LED Display for easy status monitoring.
- Buzzer sound for switching port confirmation.
- Built-in one extra daisy chain port and no waste any PC port
- Support 2 console.

## 1.1 Package Contents

### 1.1.1 2-Console 8/16 ports Combo KVM Switch

KVM Switch Unit	1 PCS
CD-ROM (User manual)	1 PCS
AC to DC Power Adapter	1 PCS
Rack Mount Kit	1 SET
Footpad	1 SET
Vga Male To Vga Male Daisy Chain cable 90 Cm	1 SET
Null modem cable	1 PCS

### 1.1.2 2-Console 8/16 ports Combo KVM Switch with IP module

KVM Switch Unit	1 PCS
CD-ROM (User manual)	1 PCS
AC to DC Power Adapter	1 PCS
Rack Mount Kit	1 SET
Footpad	1 SET
Vga Male To Vga Male Daisy Chain cable 90 Cm	1 SET
Null modem cable	1 PCS
USB A to mini-B Type Cable	1 PCS

### 1.1.3 2-Console 8/16 ports Combo KVM Switch with CAT-5 module

KVM Switch Unit	1 PCS
CD-ROM (User manual)	1 PCS
AC to DC Power Adapter	1 PCS
Rack Mount Kit	1 SET
Footpad	1 SET
Vga Male To Vga Male Daisy Chain cable 90 Cm	1 SET
Null modem cable	1 PCS

## 1.2 System Requirements

Local Console side	One VGA Monitor One PS2/USB Keyboard One PS2/USB Mouse
IP Console module ( <b>option</b> )	One CAT-5 cable Network access environment
CAT-5 KVM extender module ( <b>option</b> )	One CAT-5 cable KE-PK0101-RB / KE-UK0101-RB / KE-CK0101-RB (CAT-5 KVM extender receiver) One VGA Monitor One PS2 Keyboard One PS2 Mouse Optional PC

## 1.3 Cable Diagrams

### 1.3.1 Daisy Chain Cable:

VGA Cable: HDDDB15 pin Male to Male



<Figure .2> Daisy Chain Cable:

### 1.3.2 CAT-5/5E/6 Straight Through UTP/STP Cable



<Figure .3> CAT-5/5E/6 Straight Through UTP/STP Cable

## 2. Hardware Installation

Prior to installation please switch off all computer and peripherals. Following guide is using 8-port Combo KVM as example. Please note 16/32-port Combo KVM has similar hardware installation.

### 2.1 Rack Mount Installation

Please open the package carefully and take out all required accessories to prepare fluent installation. The size of device is 19". For installation on rack please install the rack-mount kit. Please measure the suitable distance between Combo KVM and computer, keyboard, monitor and mouse before installation.



<Figure .4> Rack Mount Installation

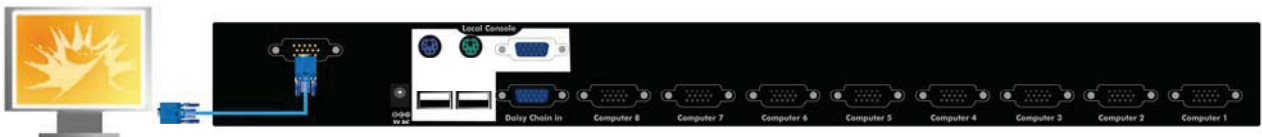
### 2.2 Console Installation

#### 2.2.1 Step 1

Plug power adaptor into Combo KVM and power socket. You will hear one beep and port-1 red LED Constant lids.

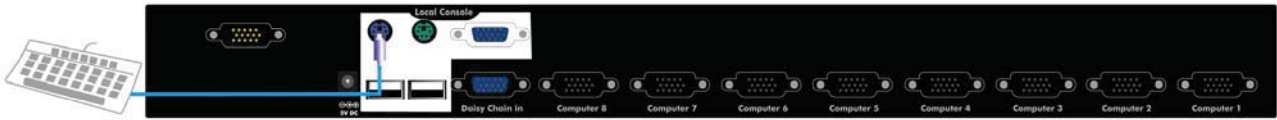
#### 2.2.2 Step 2

Please connect HDB 15-pin blue connector on monitor to console port on Combo KVM as illustrated below:



#### 2.2.3 Step 3

Please connect PS2 Mini Din 6-pins purple connector or USB A-Type on keyboard to console port on Combo KVM as illustrated below:



### 2.2.4 Step 4

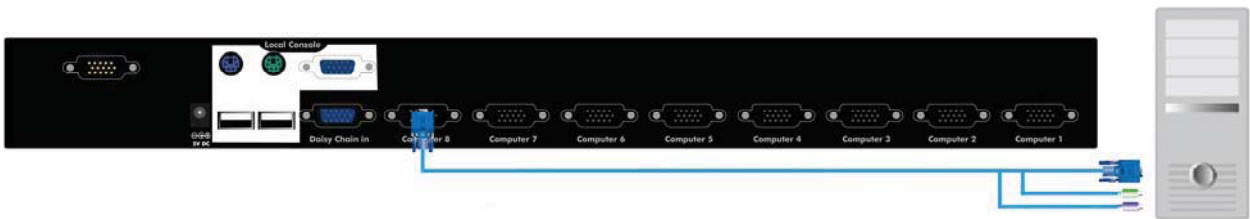
Please connect PS2 Mini Din 6-pins green connector or USB A-Type on mouse to console port on Combo KVM as illustrated below:



### Step 5

Please use KVM Cable to connect computer and Combo KVM.

★ NOTE: KVM Cable mean that 3 to 1 PS2 Cable or 2 to 1 USB Cable



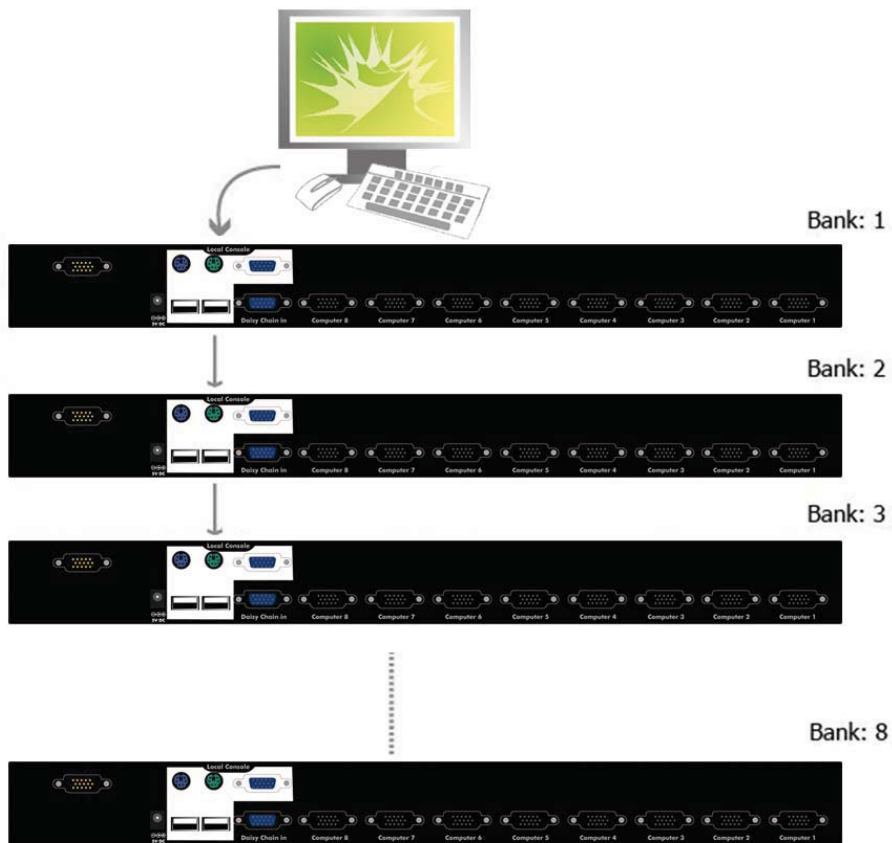
### 2.2.5 Step 6

When above cable installation is complete, please re-check all cable is securely fastened at correct socket. Recommend attach label for identification.

### 2.2.6 Step 7

If daisy chaining is needed please use the daisy chain cable included with package.

★ NOTE: Please do not use other type of cable for daisy chaining Combo KVMs.

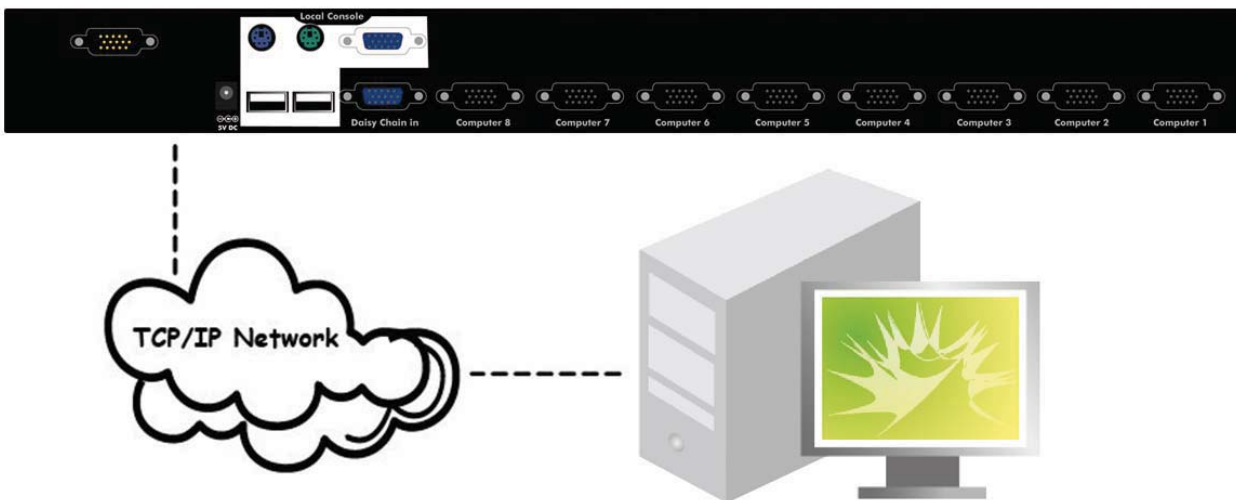


<Figure .5> Daisy Chain diagram

### 2.3 Another Console Installation(Optional)

#### IP Remote Console

Extending your PC console up to the internet/intranet:  
Connect the PC to the internet with web browser.  
Please refer to "IP KVM User's Manual" or details.



<Figure .6> IP Remote Console

## CAT-5 extender Remote Console

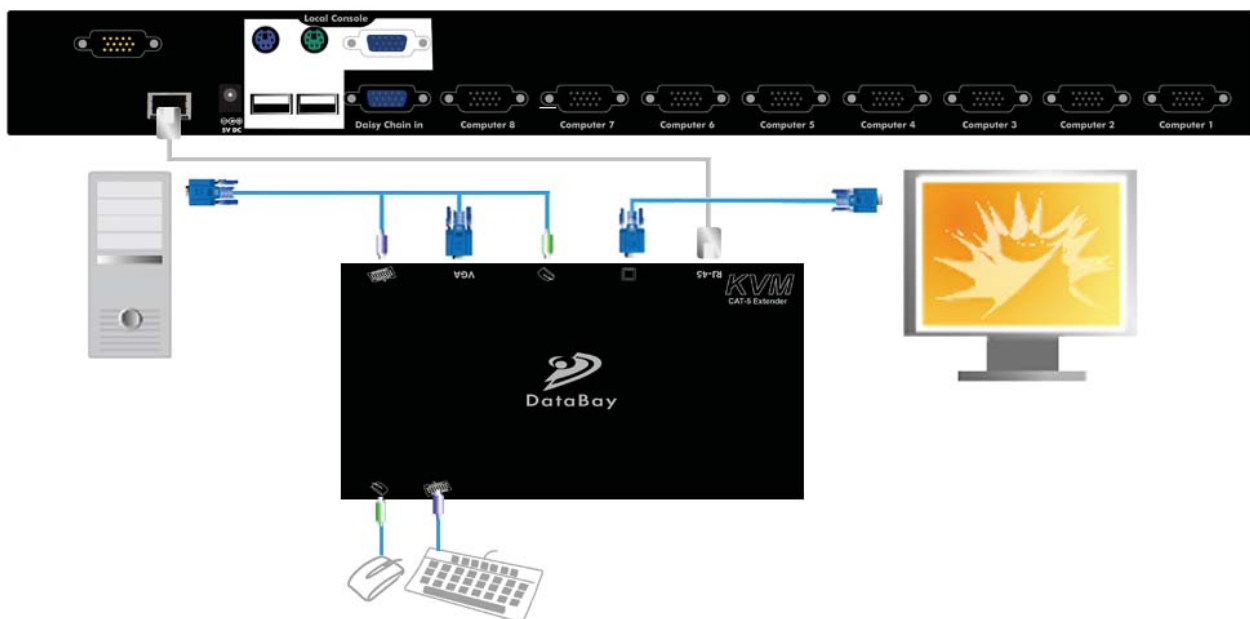
To extending your PC console up to 150 or 300 Meter, please connect the CAT-5 to the CAT-5 KVM extender receiver then switch to remote console.

### CAT-5 Receiver Installation

1. Make sure the CAT-5 cable is straight through type.
2. Plug CAT-5 cable one end into RJ-45 connector of KVM switch's CAT-5 console and the other end of CAT-5 cable into KVM CAT-5 receiver RJ-45 port.
3. Connect remote keyboard, mouse and monitor to CAT-5 extender receiver with PS2/USB Keyboard/Mouse port and Monitor port.
4. Connect Local PC to CAT-5 extender receiver by using accompanied 3 to 3 Cable Keyboard/Mouse/VGA.
5. Power on the CAT-5 Receiver by plug in the power adaptor.

### Console Control Swap

This 2 console is designed as one control double view, both local console and remote console can access and view the server but only one at a time, Local console and Remote console of KVM Switch will have the same priority to control computer. The change of the control as follow; after 2 seconds no keyboard and mouse input any console can take over the control and switch the KVM or operate on server another console can view the same display. Change local or remote console by the Hot Key.



<Figure .7> CAT-5 KVM extender receiver

### 3. Operation & Usage

At factory default the Combo KVM will not ask for password unless it is set by user. You may press "**Scroll Lock**" twice followed by "**F2**" to bring up password setting menu.




★ NOTE : Before you are familiarized with this device, it is strongly recommended to use without password. If password is forgotten, please send Combo KVM to your distributor for factory reset.

To switch port, you may enter OSD menu to select port, or, use Hot-Key to perform switching. To bring up OSD menu, please press "**Scroll Lock**" twice to activate OSD Main Menu as illustrated below <Figure. 8>.



<Figure .8> OSD Main menu

#### 3.1 OSD Main Screen Headings

	indicates the computer is powered on at selected port.
	indicates the computer attached at this port has password protected. All ports at factory default do not have password assigned, therefore no icon present.
<b>USER1~8</b>	Port name of corresponding port number. USER 1~8 illustrated as factory default setting.
	indicates the PC port is set for Auto Scan Mode. At factory default all PC port is active for Auto Scan.
<b>S</b>	Every time switching is made Combo KVM beeps for notification. Please press Scroll Lock twice followed by "S" to turn beeper on or off.

—	to select 1~8 computer Ports. (1~8 PC Port)
+	to select A~H computer port. (9~16 PC Port)
<b>R</b>	to set factory default. (★NOTE: password will not be erased after this operation)
↑	Select computer at previous port.
↓	Select computer at next port.
PgUp	Select previous bank.
PgDn	Select next bank.
1 1	Left hand side "1" indicates current active port, right hand side "1" indicates current active bank.
F1	Edit computer name.
F2	Password setting.
F3	Select scan port.
F4	Auto scan mode.
F5	Hot key setting.
ESC	Exit OSD.
SCAN RATE	Scan rate.
VERSION	Firmware version.

Use right hand side of OSD commands for adjust settings.

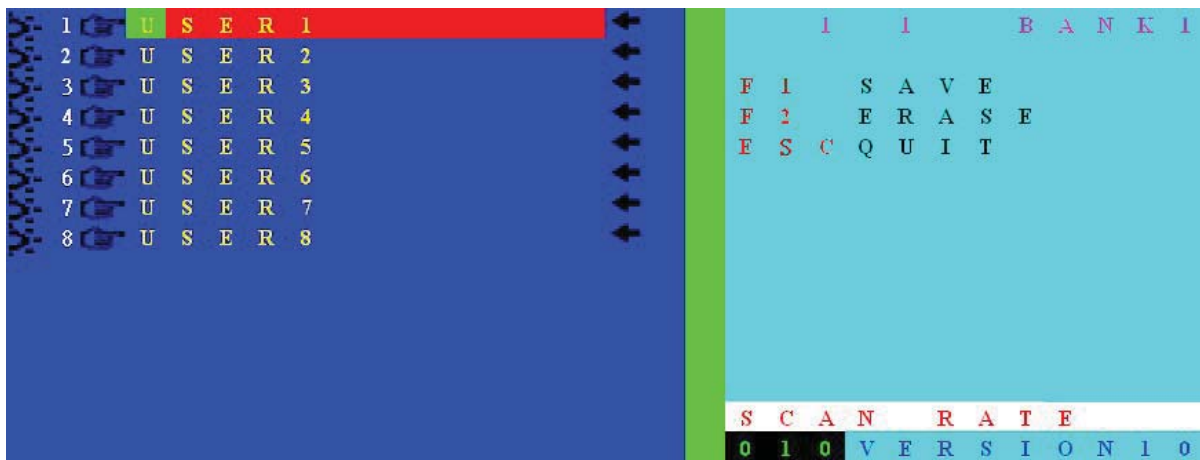
Function keys: F1, F2, F3, F4, F5, ESC and → left arrow key.

- First row on right hand window – "1 1 Bank1" : indicates currently Combo KVM active at Bank 1, computer port 1.
- SCAN RATE set at 10 second.
- Firmware version now at version 1.0

### 3.1.1 F1 - Edit computer name (EDIT)

On the OSD menu, please press F1 to edit PC port name as illustrated below <Figure. 9>. Now please use the secondary function key to F1(SAVE), F2(ERASE), or ESC(QUIT).

- Edit the desirable name at cursor position, maximum 12 characters.
- F1 - Save port name settings and brings back to OSD main menu
- F2 - Erase all texts. To erase individual character, please use Backspace (←)
- ESC - to exit EDIT menu

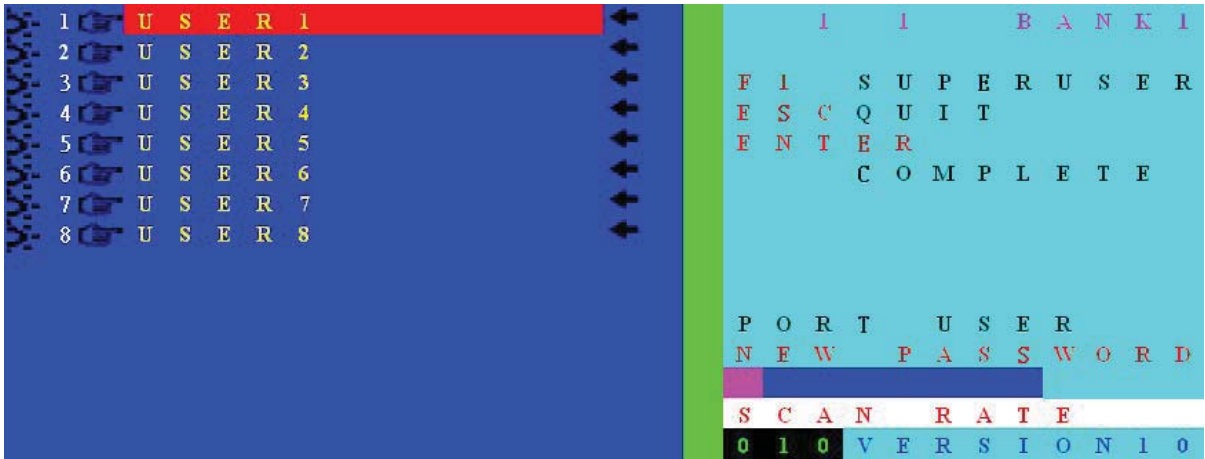


<Figure .9> Edit PC port name menu

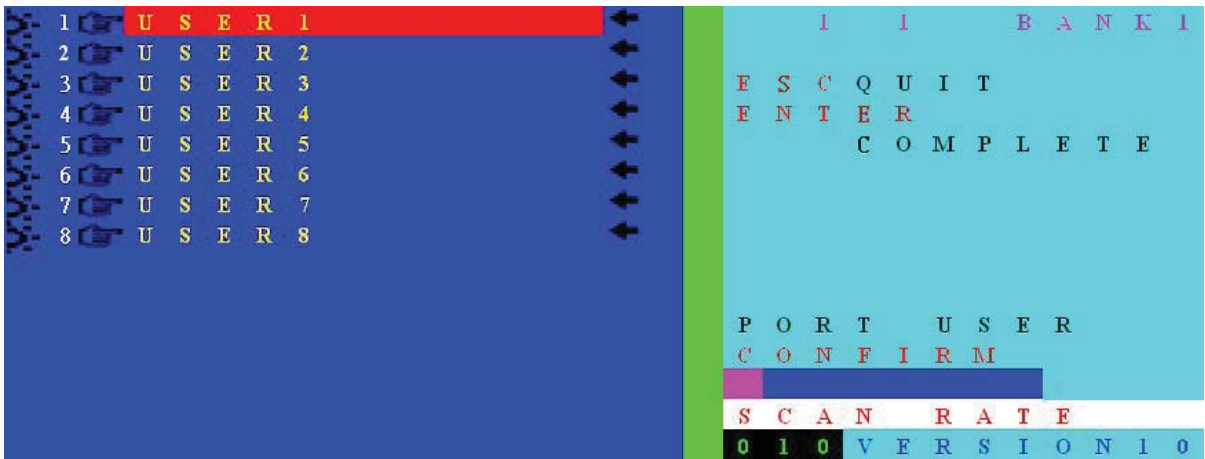
### 3.1.2 F2 - Password setting (SECURITY)

Press F2 at OSD main menu to activate password setting (SECURITY). Password setting menu for "PORT USER" pops up as illustrated below <Figure.10>. In this screen you may use the secondary OSD function keys : F1 (SUPERUSER), ESC (QUIT), ENTER (Complete).

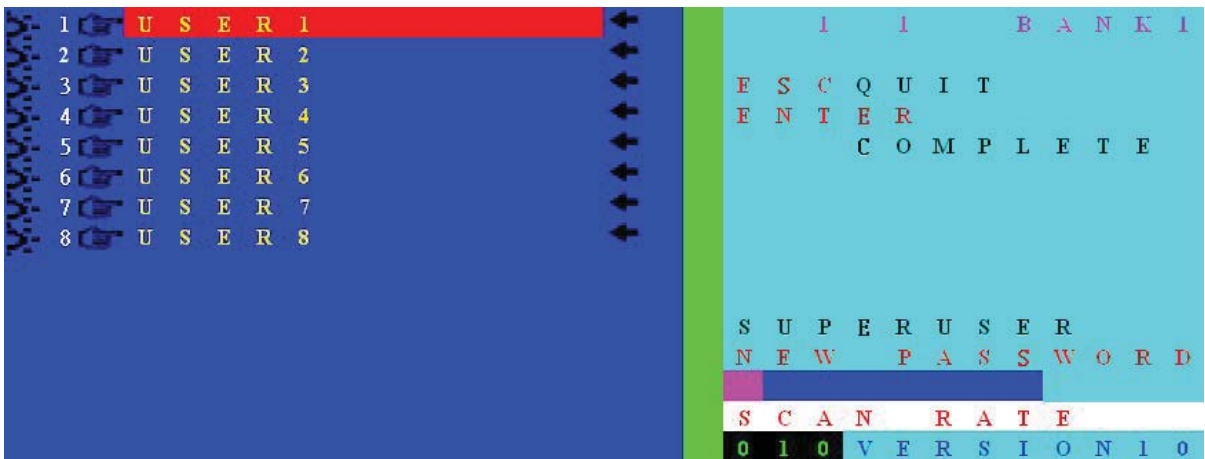
- F1 - To set password please press F1(SUPERUSER) to set SUPERUSER password <figure.12>. No password for SUPERUSER is set at factory default. Please enter password of maximum 8 characters. To remove SUPERUSER password, press ENTER at "New Password" field.
- ESC - When setting is finished, press ESC return to OSD main menu.
- ENTER - Press ENTER to complete settings.



<Figure .10> Set PC Port Password :



<Figure .11> Retype password




<Figure .12> Set Super User Password

At factory default, no password is set for Combo KVM Switch as illustrated below <figure.13>.




<Figure .13> PC port without Password

Selected PC port is powered on with  indication. To setup password please open OSD, select SECURITY. Please refer to <figure.14> and <figure.15>



<Figure .14> PC port with password



Password request OSD appears for Port-1 computer with powered on  status. Enter password directly. Password allowable length at 1 to 8 characters only (8 characters max). Press ENTER after password input to commence operation for this PC.



<Figure .15> SUPERUSER PASSWORD

If SUPERUSER password is set, Combo KVM Switch will ask for password when KVM is powered on or at RESET. Please enter password follow by ENTER key to continue operation.

### 3.1.3 F3 - SELECT SCAN PORT

Press F3 at OSD main menu to select Auto Scan active port. If a port is selected for Auto Scan, a  icon appears, press F3 again, the  icon will disappear.

### 3.1.4 F4 - AUTO SCAN

Press F4 at OSD main menu to enter Auto Scan function menu as illustrated below <figure.16>. The secondary function keys are F1, F2 and F3.

- F1 - To start complete scanning, please press F1 (BROADCAST). All ports will be scanned regardless whether the port is connected with active computer. The scanning process will be stopped when ESC is pressed. As

scan terminates, KVM switch maintains at last scanned PC port OSD.

- F2 - To start scanning powered on PC only, please press F2 (POWERED ON PC). To stop scanning, please press ESC button. As scan terminates, KVM switch maintains at last scanned PC port OSD.
- F3 - To scan selected PC, please press F3 (SCAN SELECT PC) to commence scanning. To stop scanning, please press ESC button. As scan terminates, KVM switch maintains at last scanned PC port OSD.
- ESC - Press ESC to Exit the Auto Scan menu.



<Figure .16> AUTO SCAN

### 3.1.5 F5- HOT-KEY

At OSD main menu, please press F5 to enter HOT-KEY setting menu <figure.17>. In the HOT KEY setting menu, secondary selection keys are F1, F2, F3, ENTER.

- F1 - to select Scroll Lock as Hot-key
- F2 - to select Num Lock as Hot-key
- F3 - to select Caps Lock as Hot-key
- ENTER - to save setting and exit the Hot-key setting menu



<Figure .17> Hot Key

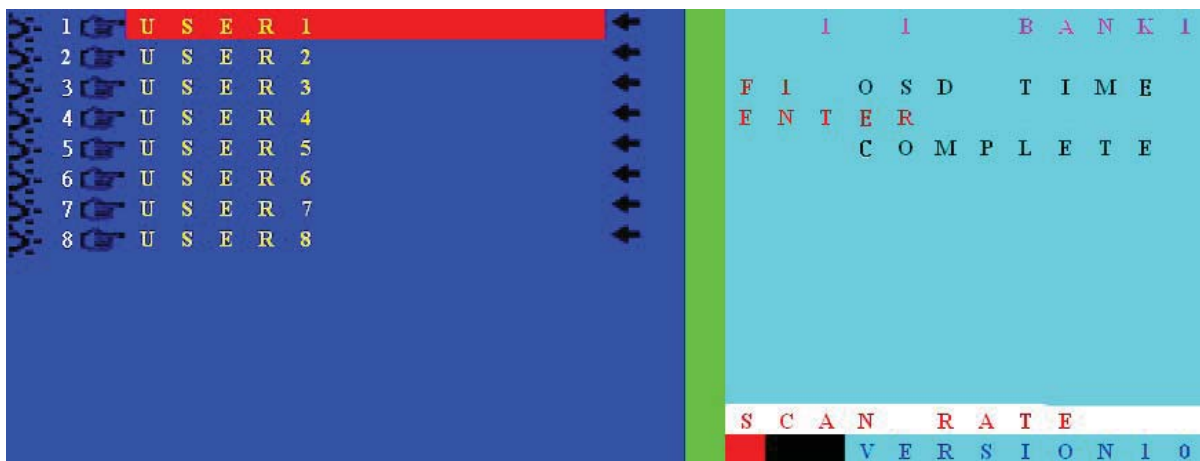
- OSD RATE / SCAN RATE SETTING

To set scan rate please press → button to enter Scan Rate/OSD Rate setting menu as illustrated below <figure.18>. The secondary menu

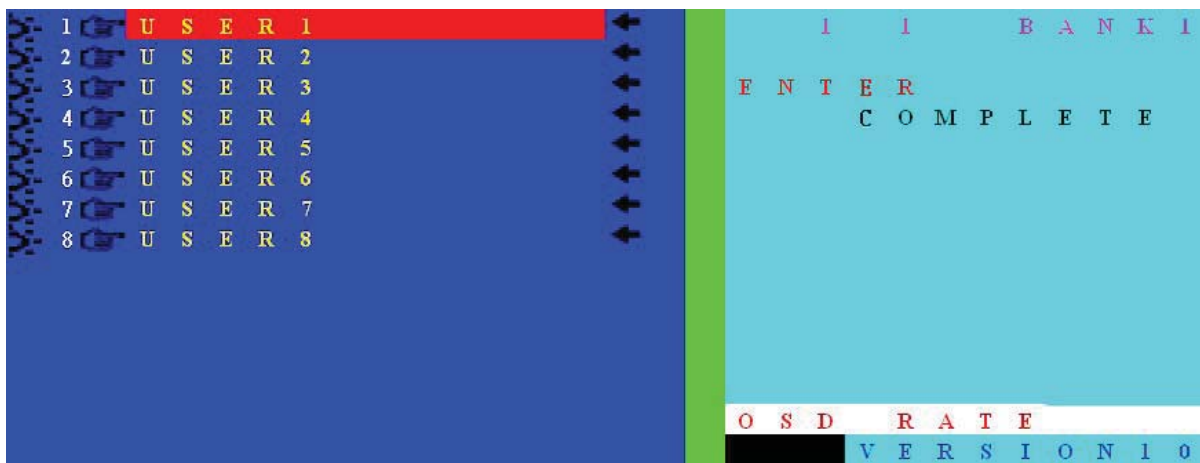
functions are F1 and ENTER button. Please note that scan rate is set 10 seconds at factory default. Please enter desirable time interval (005~255 seconds) in the cursor and press ENTER to confirm setting.

- Please press F1 to enter OSD TIME setting screen <figure.19>. Please enter OSD RATE at bottom right corner (005~255 seconds).
- Please press ENTER to complete setting (005~255 seconds) and returns to OSD main menu.
- Please press ESC to clear OSD display if OSD Time is not set. When OSD Time is set, please wait until setting time terminates. Note that ESC button OSD cancellation cannot be used when OSD Time is set.

★ NOTE: When entering OSD RATE and SCAN RATE please enter complete three digits. For example, to enter 5 seconds, please input 005; to enter 10 seconds, please input 010.



<Figure .18> Main OSD scan rate setting menu



<Figure .19> OSD time setting menu

## 4. Firmware upgrade

This Combo KVM Switch has built in ability to upgrade firmware. Whenever upgrading is desirable, the device can be easily upgraded without purchasing new hardware to suit the new environment.

A CD ROM software package is included with the package. Please execute FW Upgrade tool.exe to obtain the new firmware file. Upgrading is done through RS-232 connection to Combo KVM to complete the process.

★This firmware updates OSD functions

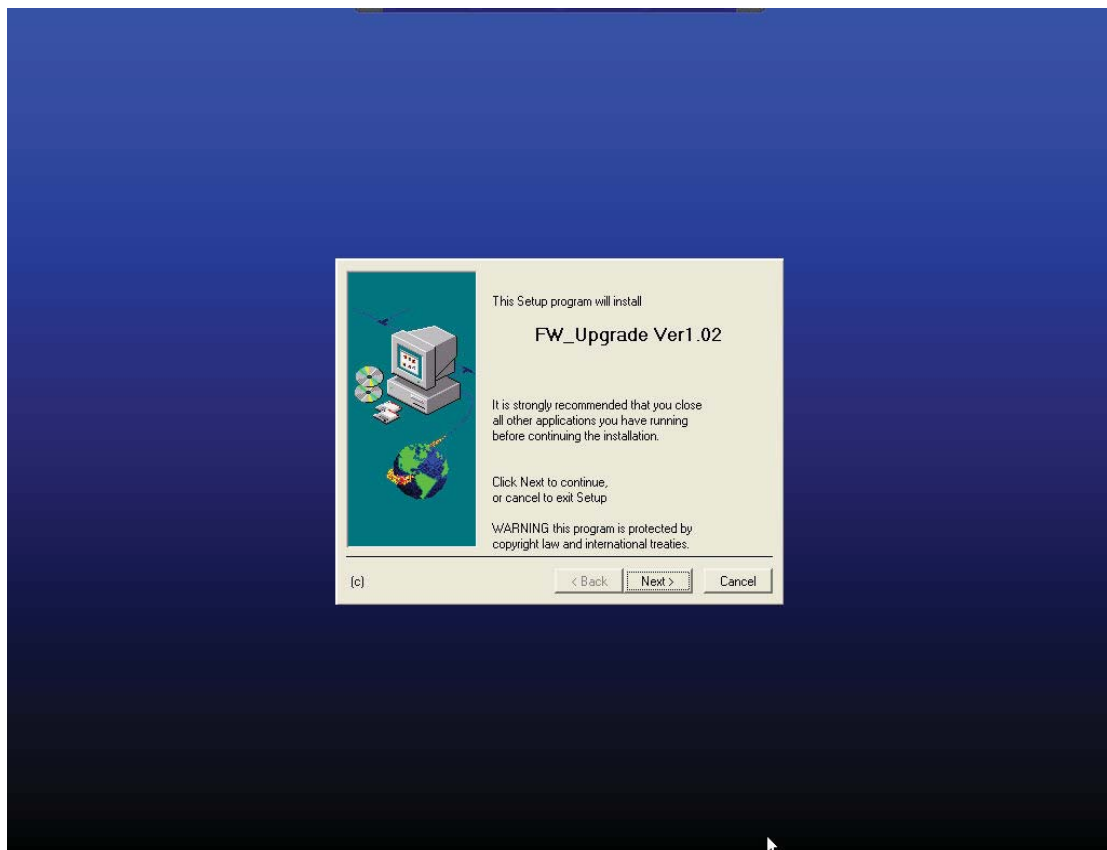
### 4.1 Updating Procedure

#### 4.1.1 Step 1

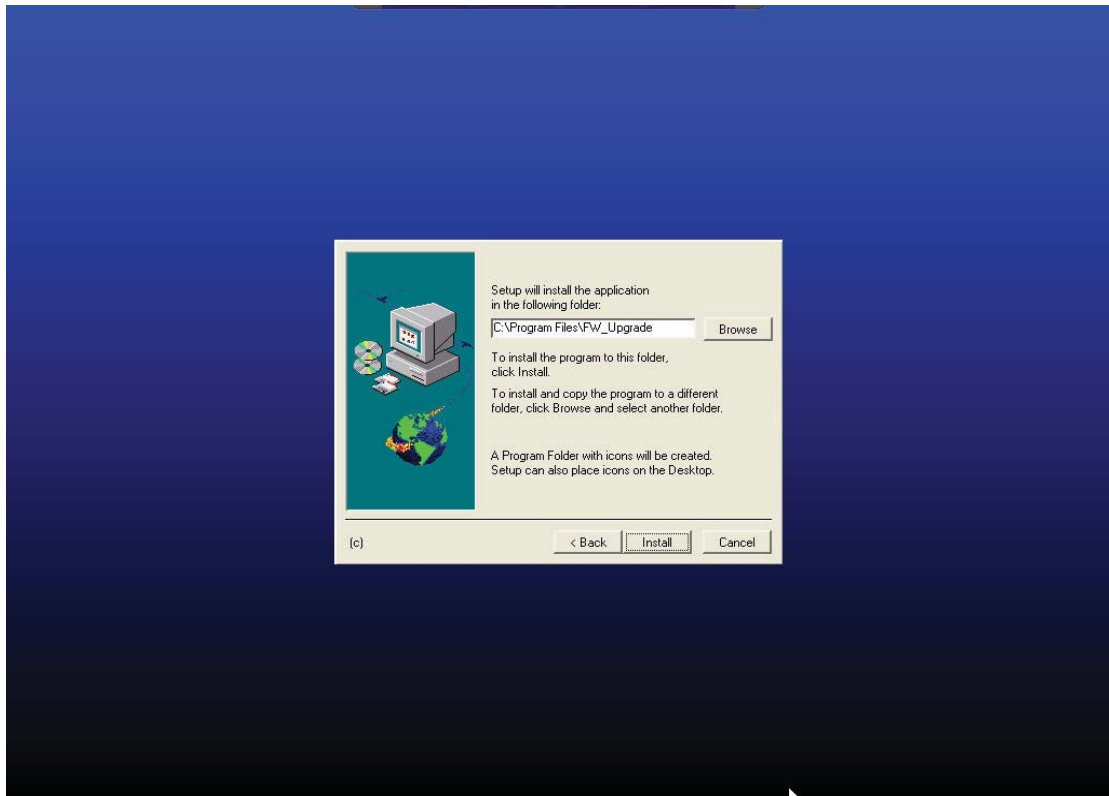
Please connect the RS-232 cable included with the Combo KVM package connect with a computer with FW Upgrade tool.exe file and Combo KVM.

#### 4.1.2 Step 2

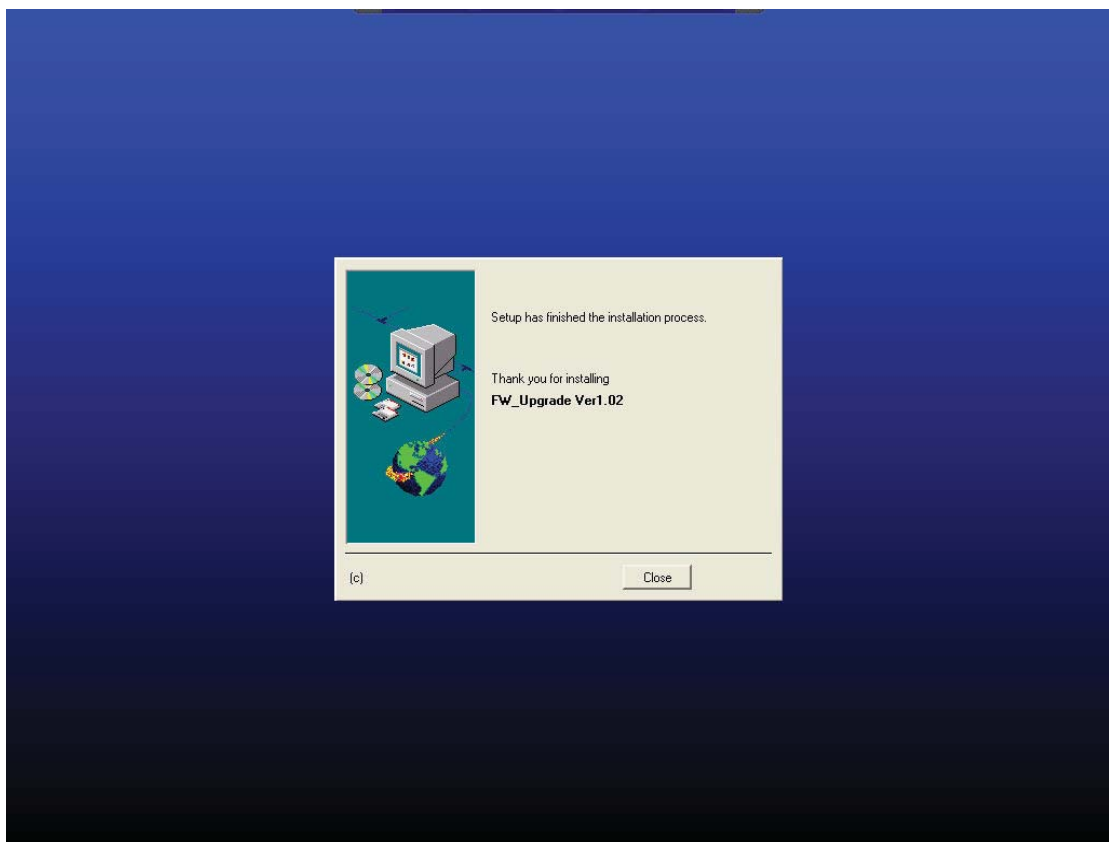
Power on all connecting devices and execute FW Upgrade tool.exe file. When running FW Upgrade tool.exe, you will see the following image <figure.20>, <figure.21> and <figure.22>.



<Figure .20> running FW Upgrade tool.exe



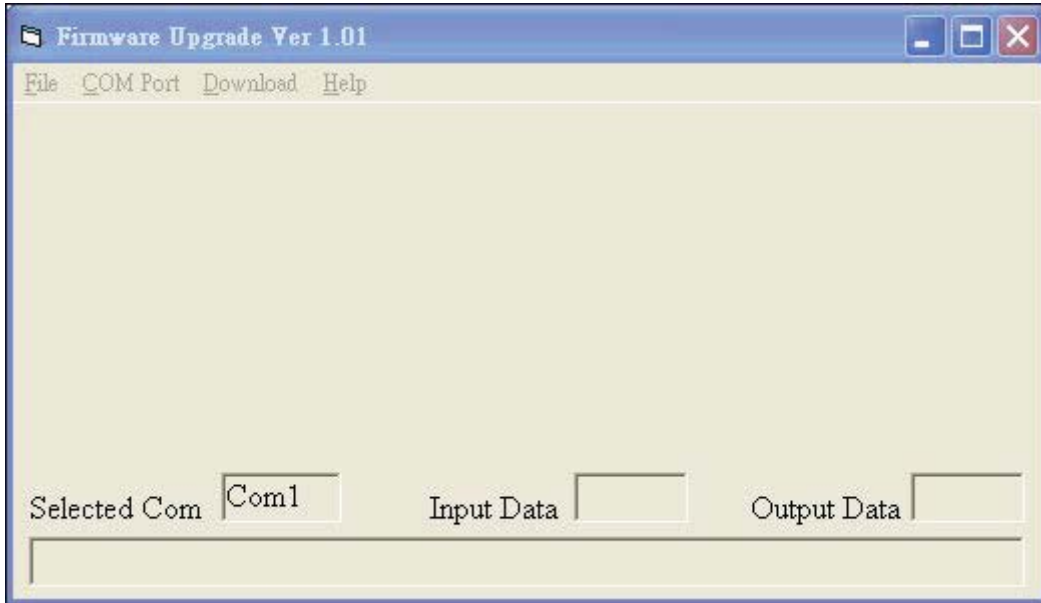
<Figure .21> running FW Upgrade tool.exe



<Figure .22> running FW Upgrade tool.exe

### 4.1.3 Step 3

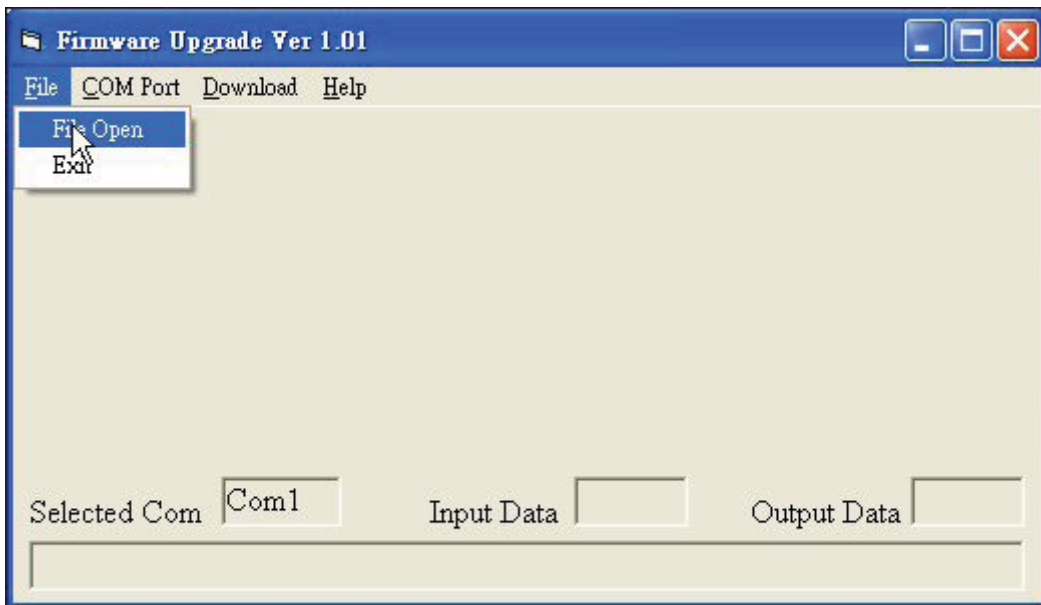
Please run FW upgrade program as illustrate below. <figure.23>



<Figure .23> FW upgrade program

### 4.1.4 Step 4

Download new upgrade file as illustrate below. <figure.24>



<Figure .24> Download new upgrade file

#### 4.1.5 Step 5

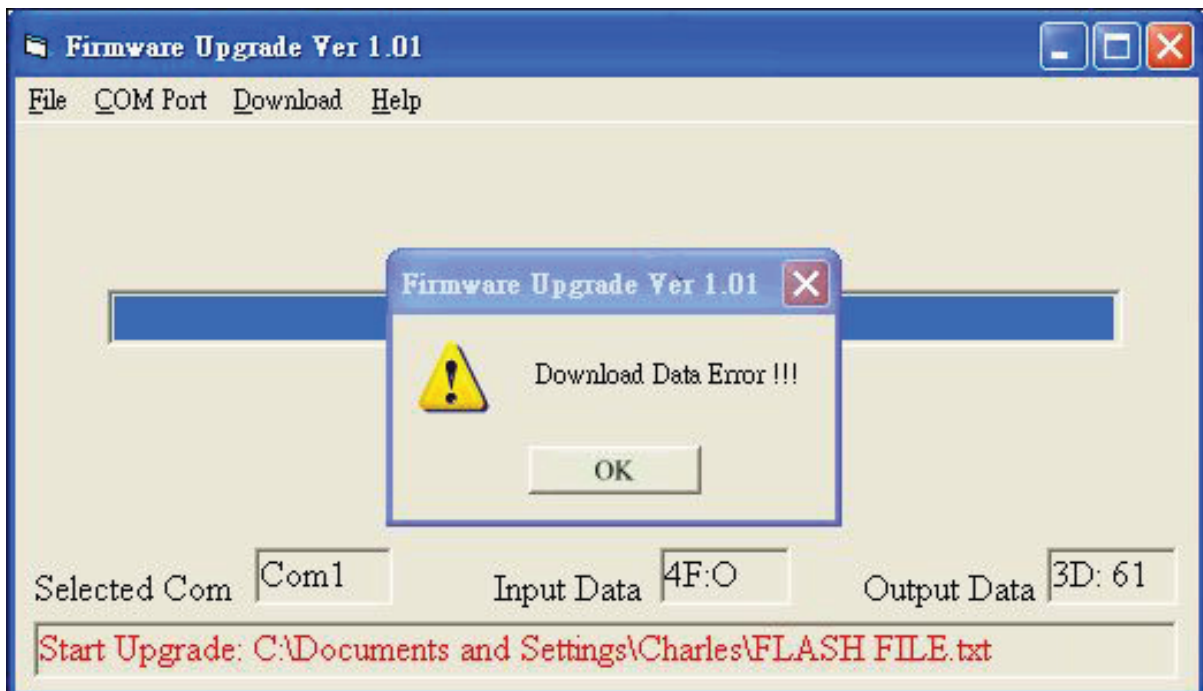
KVM not found as illustrate below. <figure.25>



<Figure .25> KVM not found

#### 4.1.6 Step 6

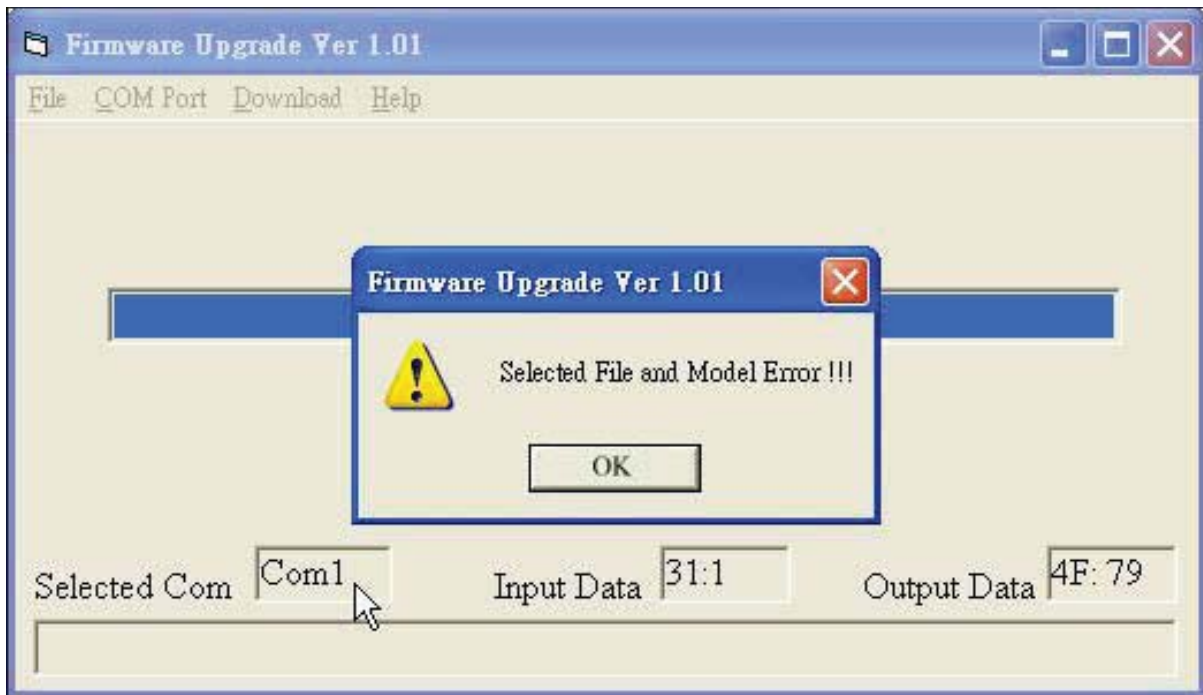
If RS-232 Port Fail as illustrate below. <figure.26>



<Figure .26> RS-232 Port Fail

#### 4.1.7 Step 7

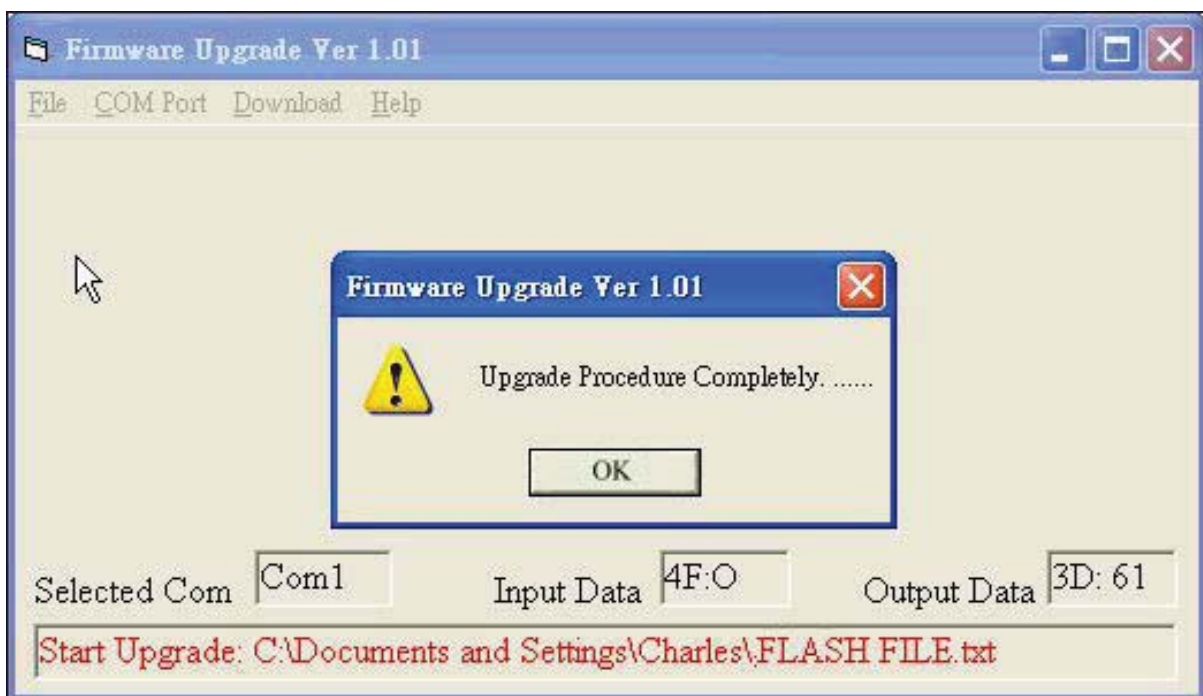
The models chosen are not accorded with upgrade file as illustrate below.  
<figure.27>



<Figure .27> models chosen are not accorded

#### 4.1.8 Step 8

Firmware upgrade successful as illustrate below. <figure.28>



<Figure .28> Firmware upgrade successful

## 5. Technical Specifications

<b>Model Name</b>	<b>8-port Combo KVM Switch</b>	<b>16-port Combo KVM Switch</b>
<b>Model No.</b>	<b>KV-CC0801-0B</b>	<b>KV-CC1601-0B</b>
PC Port Connector (All Female Type)	8x HDB 15pin (Integrated connector for Keyboard/mouse/VGA Signal)	16x HDB 15pin (Integrated connector for Keyboard/mouse/VGA Signal)
Console Port Connector (All Female Type)	2x PS/2 Keyboard / Mouse 2x USB Type A Keyboard / Mouse 1x VGA HDB 15pin	
*Optional IP Remote Console Module Connector (All Female Type)	1x RJ-45 1x RS-232 1x Mini USB	
*Optional CAT-5 Remote Console Module Connector(All Female Type)	1x RJ-45	
*Optional PS/2 KVM Extender Receiver Connector(All Female Type)	1x RJ-45 2x PS/2 Keyboard / Mouse 1x VGA HDB 15pin for Remote Console 2x PS/2 Keyboard / Mouse 1x VGA HDB 15pin for Local PC	
*Optional USB KVM Extender Receiver Connector(All Female Type)	1x RJ-45 2x USB Keyboard / Mouse 1x VGA HDB 15pin for Remote Console 2x USB Keyboard / Mouse 1x VGA HDB 15pin for Local PC	
*Optional Combo KVM Extender Receiver Connector(All Female Type)	1x RJ-45 2x PS/2 Keyboard / Mouse 2x USB Keyboard / Mouse 1x VGA HDB 15pin for Remote Console 2x PS/2 Keyboard / Mouse 2x USB Keyboard / Mouse 1x VGA HDB 15pin for Local PC	
Daisy Chain Port Connector	1 x HDB 15pin (Integrated connector for Keyboard /mouse/VGA Signal)	
PC selection	On Screen Display (OSD) Menu, Hot Key, Push Button	
PC Port LED	8	16
Bank 7 segment LED	3 Digits	

On Screen Display (OSD) Control	Yes	
Scan Intervals	005~255 Sec.	
Keyboard Emulation	PS/2 or USB (depends on what kind of transmitter you used)	
Mouse Emulation	PS/2 or USB (depends on what kind of transmitter you used)	
VGA Resolution	Local console up to 1920X1440	
Daisy Chain MAX Level	8 levels maximum	
MAX PC Connection	120	128
Housing	Metal	
Power supply	Power adapter DC 5V/2.6A	
Operation Temperature	0~50℃	
Storage Temperature	-20 ~ 60℃	
Humidity	0~95%, Non-Condensing	
Size	19" Rack Mount / 1RU	19" Rack Mount / 1RU
Weight (g)	2000	2200
Dimension (cm)	442(L) X 161(W) X44.3 (H) mm	442(L) X 161(W) X44.3 (H) mm

## 6. Troubleshooting

1. The computer boot up fine, but keyboard doesn't work
  - PS2 keyboard or PS2 mouse port is not designed for hot plug. USB mouse, keyboard can hot plug, but need to wait few second for PC bus emulations.
  - The port start from left bottom corner at back of the KVM switch.
  - Don't press any keys on the keyboard while the selected computer is booting up. Otherwise, it might cause the keyboard error or keyboard is not detected at PC side.
  - Make sure the keyboard works when directly plugged into the computer.
  - Try a different keyboard, but use only 101, 102 or 104-key keyboard.
2. The Mouse is not detected during PC boot up.
  - Make sure the USB or PS2 mouse works when directly plugged into the computer.
  - Avoiding moving the mouse or pressing the mouse buttons when switching ports.
3. CAT-5 Console Extender power LED is not ON, to make sure power adapter is connected to KVM CAT-5 extender.
4. No video signal is displayed on the remote monitor.
  - Please go to check all of VGA cables & connector and CAT-5 cable & connector is loosed or disconnected. VGA cable was not attached to computer during boot up process.
  - Power adapter is not connected to extender.
5. Video signal is foggy or un-cleared on the screen,
  - Please check VGA connector, or the VGA resolution is too high for the length of cable being used. If the problem happened at VGA resolution, to shorten the CAT-5 cable length or reduce VGA resolution.
  - It is highly recommended to use "optimal CAT-5 cable length" to get the best video quality and don't waste unnecessary CAT-5 cable. Video resolutions supported up to 1024 X 768 for CAT-5-Based 300 m remote user and up to 1280 X 1024 for CAT-5-Based 150 m remote user.
  - Check the local monitor ground. If the CAT-5 Receiver do not have a local PC. Please make should the check monitor ground.
  - The KVM switch will provide DDC information to all the PC VGA board, if the local both console's monitor and KVM switch have been turn on

before the PC boot up, if the PC boot up faster then the KVM the PC miss the DDC (Data Display Channel) information so please turn of the PC wait few minute then turn on again.

## 7. 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, including interference that may cause undesired operation.

### CE

This equipment is in compliance with the requirements of the following regulations:

EN 55022: CLASS B

### RoHS

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



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