Smart-AVI
SMART AUDIO VIDEO INNOVATION

Installation
Manual

QuadKVM
Quadruple View KVM Switch

**View four different analog/digital video sources
simultaneously on one screen
with USB keyboard and mouse support.**

Introduction

The QuadKVM Switch allows you to view up to four different analog and digital video sources simultaneously on one display device. It also supports keyboard and mouse functionality, allowing you to access all four displays with one set of interface controls. Connections to video sources are managed via DVI-I connectors. Advanced viewing options include dual-mode, quad-mode, full-screen mode, and PIP (picture in picture) mode. Use this device to simplify management of multiple sources by accessing and controlling them all through a single display and set of controls.

Features

- View up to four computers on a single monitor at the press of a button
- Supports USB keyboard and mouse
- On-screen display (OSD) makes setup and switching easy
- Change views by pressing the tact switches, keyboard hotkeys, and RS-232
- Display each computer with clean and crisp high-resolution video
- Supports DVI-D resolutions up to 1900 x 1200 @ 60 Hz
- Supports VGA resolutions up to 1600 x 1200 @ 60Hz
- Quad-mode splits the screen to show four computers on one screen
- Dual-mode splits the screen to show two computers on one screen
- PiP-mode displays one computer in full screen with three thumbnail views
- Control any one computer while monitoring three others
- User-defined frame rate for each input

QuadKVM Front

QuadKVM Rear

What's in the Box?

PART NO.	QTY	DESCRIPTION
SMQKVM	1	4-Port DVI, USB 1.1 KVM switch with PiP/Dual/Quad/Full modes.
PS5VDC4A	1	5VDC4A Power Supply

Technical Specifications

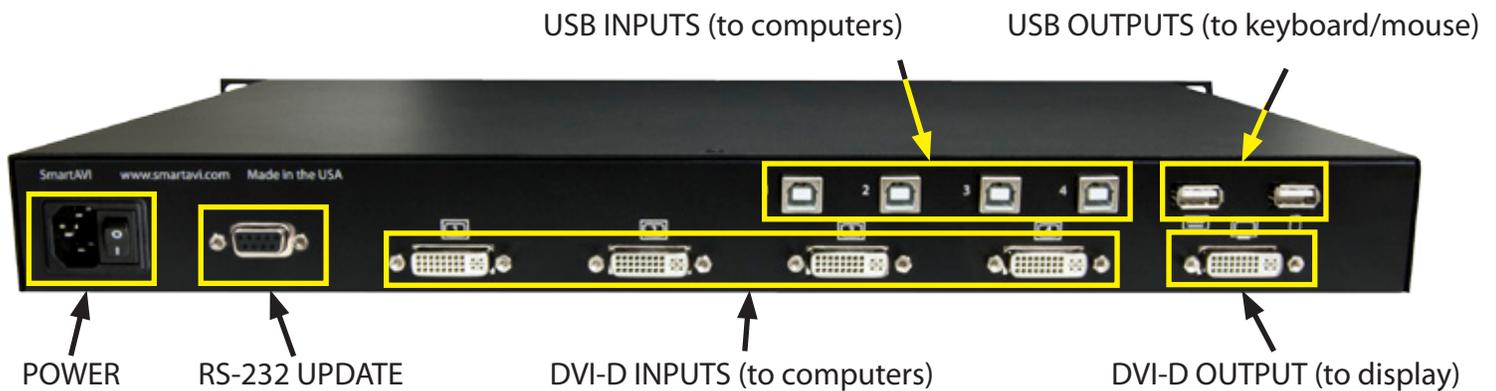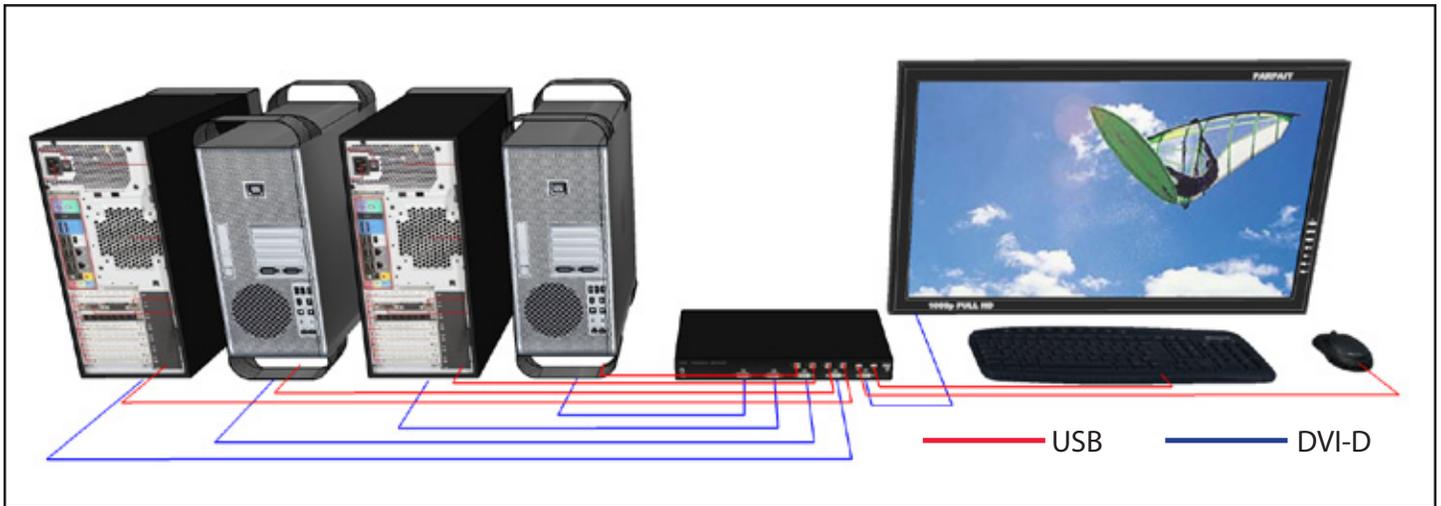| VIDEO	
Format	DVI-D Single Line
Maximum Pixel Clock	165 MHz
Input Interface	(4) DVI-D 29-pin female
Output Interface	(1) DVI-D 29-pin female
Resolution	DVI-D up to 1920 x 1200 @60Hz VGA up to 1600 x 1200 @60Hz
DDC	5 volts p-p(TTL)
Input Equalization	Automatic
Input Cable Length	Up to 20 ft.
Output Cable Length	Up to 20 ft.
USB	
Signal Type	USB 1.1 and 1.0
Input Interface (TX)	(4) USB Type B (Female)
Output Interface (RX)	(2) USB Type A (Female)
CONTROL	
Front Panel	Tact Switches
Keyboard	Hotkeys
RS-232	RS-232 Commands
OTHER	
Power	External 100-240 VAC/5VDC4A @20W
Dimensions	17"W x 1.75"H x 10.25"D
Weight	5 lbs.
Approvals	UL, CE, ROHS Compliant
Operating Temp.	32-131°F (0-55 °C)
Storage Temp.	-4-185 °F (-20-85 °C)
Humidity	Up to 95%

Mac   QuadKVM   PC

Applications

The QuadKVM can be used in many applications that require the real-time monitoring of multiple computers. It is a perfect solution in situations where a user needs to monitor several computers at the same time. In Air Traffic Control environments, several computers need to be monitored for the progress of flights and flight information. The QuadKVM is perfect for multi-tasking, allowing the user to run tasks on each computer and monitor their progress without having to switch back and forth between them.

- Corporate or Educational Presentations
- Financial (Remote Servers/User Control)
- Call Centers for Technical Support
- Industrial (Long-Range Workstation Isolation)
- Airport Installations (Air Traffic Control/Passenger Information)
- KVM Extension where Exceptional Quality of Signal is Crucial
- Medical (Remote Operation Away from Sensitive/Magnetic Equipment)
- Recording (for Large Studios where Editing/Mixing Stations are Compact and/or Require Complete Silence)

Installation

USB ————— DVI-D

USB INPUTS (to computers)   USB OUTPUTS (to keyboard/mouse)

POWER   RS-232 UPDATE   DVI-D INPUTS (to computers)   DVI-D OUTPUT (to display)

1. Power off all computers and the display.
2. Connect the USB output of each computer to the USB inputs on the QuadKVM using male to male A to B USB cables.
3. Connect the DVI-D output of each computer to the DVI-D inputs on the QuadKVM using male to male DVI-D cables.
4. Connect the USB keyboard and mouse to the USB outputs on the QuadKVM.
5. Connect the DVI-D display to the DVI-D output on the QuadKVM.
6. Power on the QuadKVM by connecting the power cable.
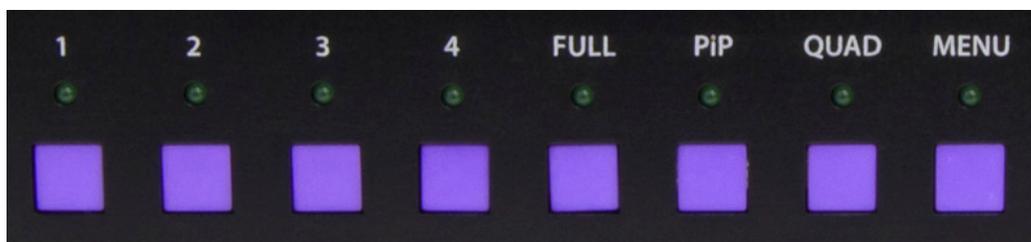7. Power on the computers and the display.

Operation

Setting the Resolution

The first time you connect a display to the QuadKVM, you will need to set the output resolution to that of your display. To change the resolution, press **MENU** and then a number **1-3**.

The corresponding resolutions are as follows:

1 - XGA 1024x768
2 - HDTV 1080p
3 - WUXGA 1920x1200

Front Panel Operation

QuadKVM Front Panel Buttons and Indicators

The QuadKVM operates in much the same way as a conventional KVM. To view and control any input, simply press the corresponding button on the front of the QuadKVM. For example, press 1 for the first input, 2 for the second input, and so on. The LED lights will change accordingly.

In addition to the standard KVM functions, the QuadKVM is capable of displaying several inputs at a time with different modes of operation. To switch to a particular mode, simply press the the corresponding button on the front of the QuadKVM. The available modes are defined as follows:

FullScreen Mode - In the FullScreen mode, one of the four computers` video sources is displayed in full screen size and maximum resolution. Keyboard and mouse operation automatically switch to the corresponding computer.

*For Fullscreen Mode, press **FULL.***

PiP Mode - In the PiP(picture in picture) mode, the full screen display of one of the four video sources is accompanied by one or three small images (thumbnails) containing the other video sources on the right-hand margin of the screen allowing simultaneous monitoring.

*For Picture-in-Picture Mode, press **PiP.***

Dual-Mode - In Dual mode, the screen is split into two fields of equal size with the screen content of two video sources or computers being displayed in each of these fields. Keyboard and mouse operation can be selected to the field of the corresponding computer.

Press **Quad** to toggle between Dual-Mode and Quad-Mode. After selecting Dual-Mode, press the number for the left-side input and then the number for the right-side input.

Quad-Mode - In Quad mode, the screen is split into four fields of equal size with the screen content of four video sources or computers being displayed in each of these fields. Keyboard and mouse operation can be selected to the field of the corresponding computer.
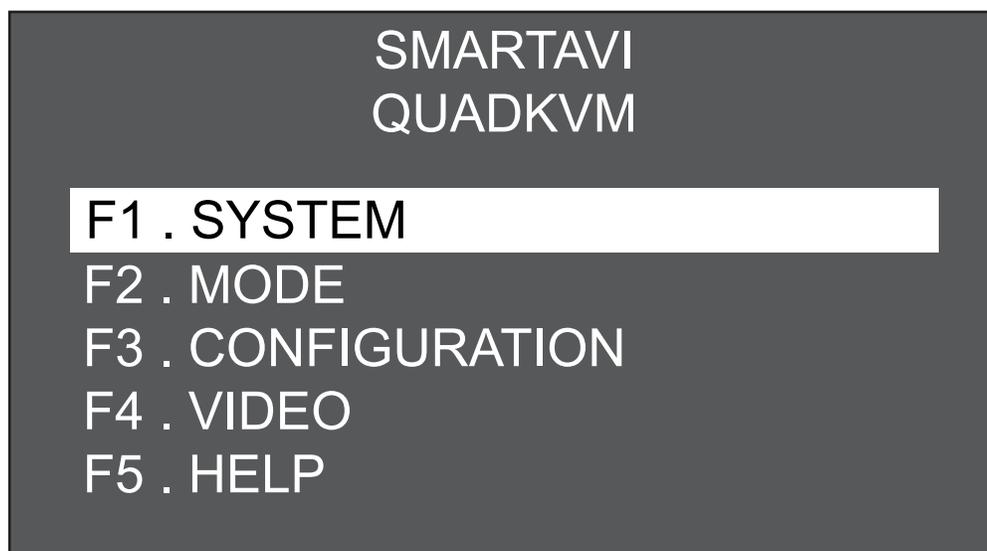**_Press Quad to toggle between Dual and Quad-Mode_**

Keyboard Hot-Key Operation with the On-Screen-Display (OSD)

The QuadKVM can be controlled via keyboard hot-keys that make the functions of the QuadKVM available at the console keyboard. The hot-keys are programmable via the OSD menus. By default, the primary hot-key is **_Scroll Lock._**

To change the active input, press **_Scroll Lock_** twice and then press the up/down arrows to cycle the next/ previous inputs. You can also select a specific input in Quad and Dual mode by pressing **_Scroll Lock_** twice, followed by the letter **_U_**, and then the number of the input you would like to select.
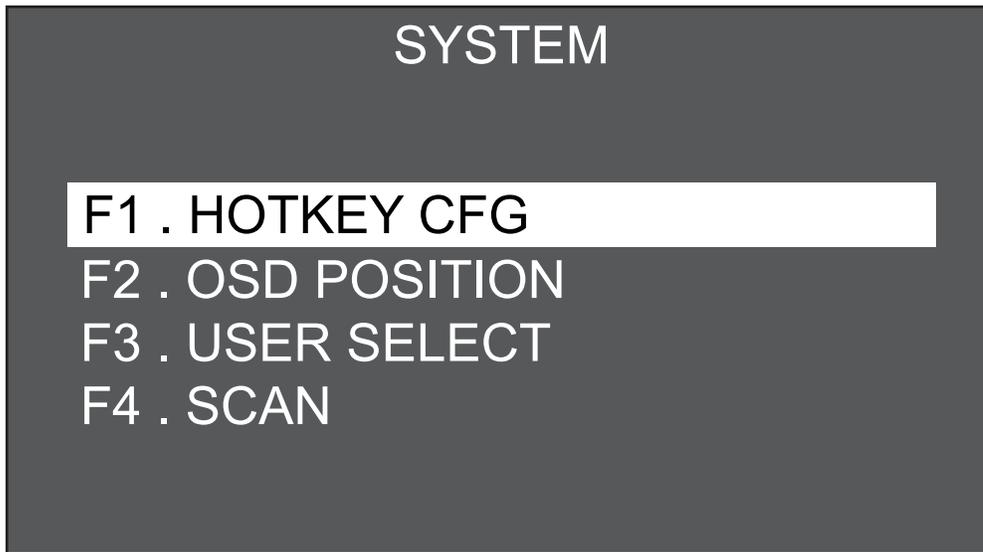
To bring up the on-screen display (OSD), press **_Scroll Lock_** twice and then the letter **_O._** The OSD may also be accessed by pressing and holding the **_Menu_** button on the front of the QuadKVM for 2 seconds. Once the OSD is displayed, use the number or arrow keys to select an option.

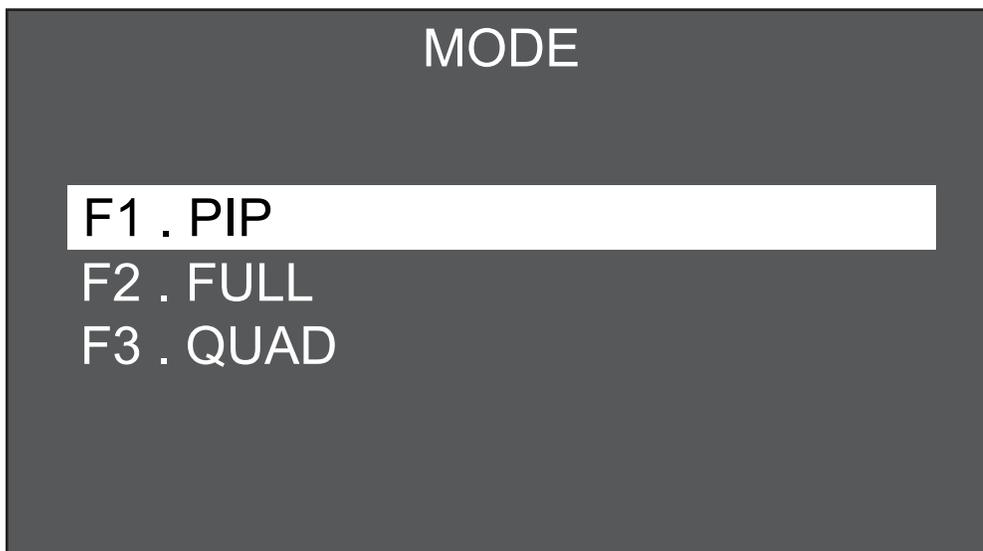Screenshot of the QuadKVM's Main OSD

SYSTEM

The SYSTEM OSD option (F1 from the main OSD) allows the user to configure the hotkeys (F1), change the OSD position (F2), select from set users (F3), and scan the inputs 1-4 once (F4).

SYSTEM

F1 . HOTKEY CFG
F2 . OSD POSITION
F3 . USER SELECT
F4 . SCAN

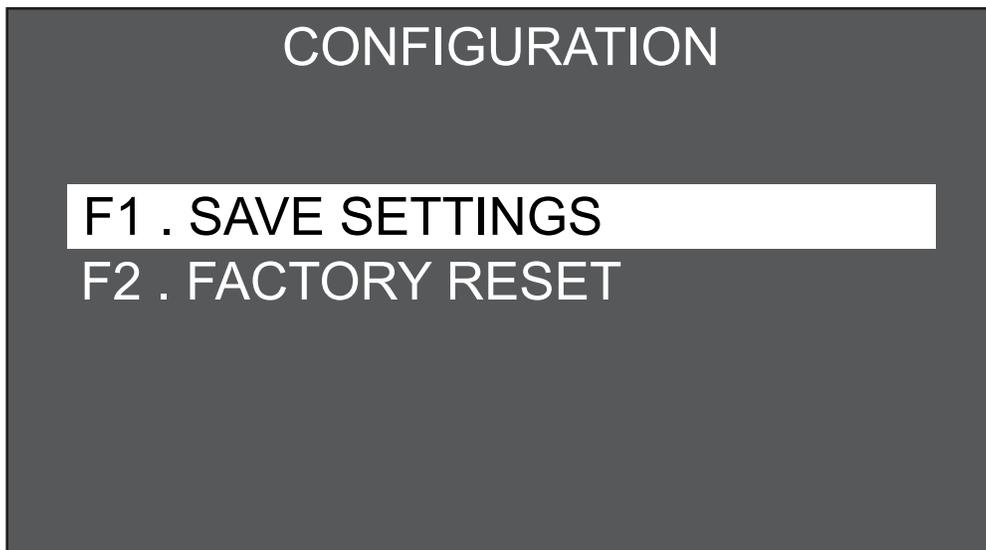Screenshot of the QuadKVM's System OSD

MODE

The MODE OSD option (F2 from the main OSD) allows the user to set the mode. The available modes via OSD are PiP (Picture in Picture) (F1), Full (F2), and Quad (F3).

MODE

F1 . PIP
F2 . FULL
F3 . QUAD
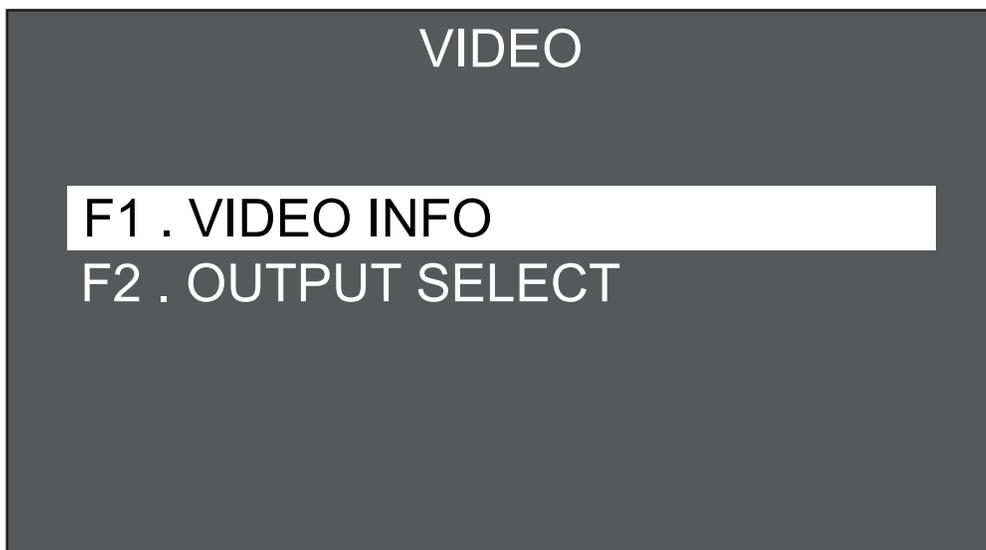
Screenshot of the QuadKVM's MODE OSD

CONFIGURATION

The CONFIGURATION OSD option (F3 from the main OSD) allows the user to back up the settings (including pre-defined user settings) (F1) and to perform a factory reset to reset the QuadKVM to its factory default settings (F2).

```
                  CONFIGURATION



        F1 . SAVE SETTINGS
        F2 . FACTORY RESET


```

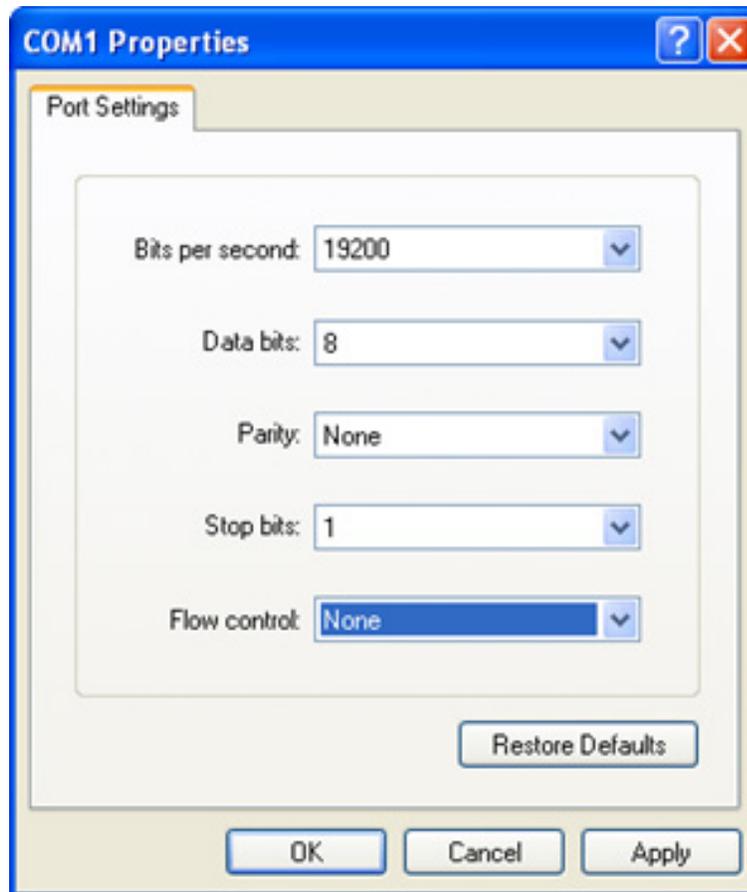Screenshot of the QuadKVM's CONFIGURATION OSD

VIDEO

The VIDEO OSD option allows the user to select the active video display inputs (F1) and the corresponding outputs (F2).

```
                     VIDEO



        F1 . VIDEO INFO
        F2 . OUTPUT SELECT


```

Screenshot of the QuadKVM's VIDEO OSD

RS-232 Operation

The QuadKVM may also be controlled via RS-232 commands. To use these commands, you must use HyperTerminal or an alternate terminal application. The settings for the connection are as follows:

Once you have connected to the QuadKVM, you must log in. To do so, type 'i' at the prompt and press <enter>. This will bring up the password entry feild. Type 'smart' and press <enter> to log in to the QuadKVM.

```
qV22112011_12:54pm>*

You must enter the password to enable the serial interface.
*****

Serial Interface has been unlocked!
```

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RS-232 Operation (continued)

Once you have entered the correct password, the following commands may be issued:

Help and a list of options	?<enter>
Information	i<enter>
Dual Mode	d<space>[LEFT 1-4]<space>[RIGHT 1-4]<enter>
Full-Screen	f<enter>
Quad-Mode	q<enter>
PiP-Mode	p<enter>
Output Resolution	o<space>[0-XGA|1-HD|2-WUXGA]<enter>

The following is an example screen shot of the QuadKVM help/options screen (this screen was displayed by pressing ?<enter>):

```
SMARTAVI serial interface Help:
=====================================================================
w    Scaler Register Write   w  [bank][register][data]
r    Scaler Register Read    r  [bank][register]
W    ADC Register Write   W [bus][address][register][data]
R    ADC Register Read    R [bus][address][register]
i    List input port info
d    Dual Mode    d [LEFT][RIGHT]
f    Full screen f [USER]
q    Quad view    q
p    PiP   p [Main Screen]<1-4>
o    Output Mode o [0-XGA|1-HD|2-WUXGA]
?    Help ?
```

To display the port information, press i<enter>. The following screen will look something like this:

```
>i

Port    source    mode    res
=============================================================
 1       VGA       XGA     1024x 768
 2       VGA       XGA     1024x 768
 3       DVI       XGA     1024x 768
 4       DVI       HD      1920x1080

Current Output: HD 1920x1080

Current Mode: QUAD VIEW
```

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