Document Camera Configuration

September 28, 2015

Appendix Overview

This appendix explains how to configure document cameras at the branches.

Topics in this appendix include:

- “Configure the Document Camera”
  - “Connect and Configure the Hardware”
  - “Create Policies in the IEM for Each Document Camera”
  - “Reboot IEC from REAC”

Configure the Document Camera

A ceiling-mounted document camera can be used in the customer pod to allow customers to share documents with the expert. It is recommended to use the Vaddio CeilingVIEW™ HD-18 DocCAM with Quick-Connect DVI/HDMI SR Interface. The REM may support different document cameras with configurable RS-232 commands. Please contact the RE team for more details if you plan to use a different document camera.

The Vaddio CeilingVIEW™ HD-18 DOCCAM camera is designed for use with high definition video conferencing codecs, HD monitors, and HD presentation applications where image quality and resolution are critical. The camera features an 18X optical zoom lens and is built around a 1/3”, 1.3 Megapixel CCD image sensors for precise HD video image acquisition even in low light applications. The camera supports HD resolution such as 1080p60, 1080p30, 720p30 and RGB resolution such as 1024x768.

The document camera system is composed of two units: the camera itself that is mounted to the ceiling (Figure B-1) and a control unit called the DocCam SR module (Figure B-2).
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**Figure B-1 Ceiling Mounted Camera**

In addition to the document camera system, the System Dimensions AVS 2610 USB video encoder dongle is required for each document camera setup. When the dongle is connected to the IEC and the document camera system, live video is captured by the document camera and then streamed by the dongle to remote computers. The AVS 2610 is HDMI compatible.

**Note**
The REM currently supports the System Dimension AVS 2610 USB video encoder dongle. The REM may support different video encoder dongles. Please contact the RE team for more details.

To enable the document camera to stream video, you will need to perform the following tasks:

1. Prepare agents’ desktops: To use the document camera, the Document Camera application and VLC Player software must be installed on each agent’s desktop. Perform the following tasks:
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a. Install Java Runtime Environment (JRE) version 7 on each agent’s desktop.


c. Install a VLC Player on each agent’s desktop.

Note

The snapshot application works only if both the JRE and VLC player are of same bit size, i.e., 64bit JRE and 64bit VLC or 32bit JRE and 32bit VLC.

2. Connect the document camera system to the IEC and the video encoder dongle

3. Create a policy in the IEM for the document camera

4. Reboot the IEC from REAC

Connect and Configure the Hardware

To connect the document camera system, follow these steps:

Step 1  Connect the EZCamera Power & HD Video port of the control unit to the camera using a Cat-5e cable with a maximum distance of 100’ (30.5 m). This port supplies power to the camera and returns HD video from the camera.

Step 2  Connect the RS-232 Control To Camera port on the control unit to the camera.

Step 3  Connect the RS-232 Control Input port on the control unit to the RS232 port on the IEC.

Step 4  Connect the DVI-D port to the HDMI input of the dongle.

Step 5  Connect the HDMI output of the dongle to a USB port of the IEC. If necessary, use an USB extension cable.
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**Figure B-3**  
**Hardware Connection Diagram**

**Table B-1**  
**Cable Connection Details for the Above Diagram**

<table>
<thead>
<tr>
<th>Number</th>
<th>Connection</th>
<th>Purpose</th>
<th>Cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>EZCamera Power &amp; HD Video Port</td>
<td>Supplies power to camera and returns HD video from the camera</td>
<td>CAT-5e Ethernet cable</td>
</tr>
<tr>
<td>2</td>
<td>SR Interface to Camera</td>
<td>RS-232 control to and from camera and IR signals returned from the camera</td>
<td>CAT-5e Ethernet cable</td>
</tr>
<tr>
<td>Number</td>
<td>Connection</td>
<td>Purpose</td>
<td>Cable</td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
<td>---------</td>
<td>-------</td>
</tr>
</tbody>
</table>
| 3      | RS-232 Control Input (A photo of this connection is shown in the figure below) | Input to SR interface from IEC RS-232 port | Shown in figure below:  
  a) 9 pin male to 3.5mm jack adapter  
  b) 9 pin female to Ethernet port adapter (comes with Vaddio camera - no need to purchase)  
  c) CAT-5e Ethernet cable |
| 4      | DVI-D Output | From SR interface DVI-D to HDMI port of dongle | DVI to HDMI cable: HDMI (v 1.3 with deep color) and DVI v 1.0 compliant |
| 5      | HDMI Output | From dongle USB to USB port of IEC | Male to female USB cable |
Step 6  Familiarize yourself with the components of the document camera using the photo and table below.
Configure the Document Camera

Figure B-5  Document Camera Components

![Document Camera Components Image]

Table B-2  Document Camera Components

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>White Trim Ring with two (2) 10-32 x ¾” Phillips Flat Head Screws</td>
</tr>
<tr>
<td>2</td>
<td>18X Optical Zoom Camera Lens</td>
</tr>
<tr>
<td>3</td>
<td>Laser Pointer and Three Point Adjustment System</td>
</tr>
<tr>
<td>4</td>
<td>Cover Cap for 16-Position Rotary HD Resolution Select Switch</td>
</tr>
<tr>
<td>5</td>
<td>Blue LED Power Indicator</td>
</tr>
<tr>
<td>6</td>
<td>IR Receiver Window (for Vaddio Remote)</td>
</tr>
<tr>
<td>7</td>
<td>Cover Cap for 8-Position Dip Switch for Specific Camera Settings</td>
</tr>
</tbody>
</table>

Note  The following information appears on a label on the back of the camera enclosure back box.
Based on your requirement and setup, the CeilingVIEW HD-18 DocCAM provides a 16-position rotary switch (No. 4 in the photo) to set a desired HD camera resolution. The camera also has a 8-position dip switch (No. 7 in the photo) for assigning certain camera functions. Those switches can be quickly accessed by taking out the covers at front of the camera.

**Step 7** Configure the document camera:

a. For the 8-position DIP switch, set the IR switch to **IR OFF** to use the RE-232 camera control.

![Document Camera Switch Settings]

**Figure B-6** Document Camera Switch Settings

<table>
<thead>
<tr>
<th>Switch</th>
<th>Function</th>
<th>Default</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IR ON/OFF</td>
<td>ON</td>
<td>• “ON” for using an IR remote to control the camera</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• “OFF” for using RS-232 commands to control camera control</td>
</tr>
<tr>
<td>2</td>
<td>Baud Rate</td>
<td>9600 bps</td>
<td>9600 bps should work with most environments</td>
</tr>
<tr>
<td>3</td>
<td>Alternate IR Remote</td>
<td>OFF</td>
<td>“ON” for using zoom in/out controls with a Polycom, LifeSize, or Cisco/Tandberg IR remote control. The tilt down command on those remote will activate the monetary laser pointer for document positioning.</td>
</tr>
<tr>
<td>4</td>
<td>Laser Pointer</td>
<td>ON</td>
<td>• “ON” for enabling the Laser Pointer feature</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• “OFF” for disabling the Laser Pointer feature</td>
</tr>
<tr>
<td>5</td>
<td>Test Bars</td>
<td>OFF</td>
<td>Convenience, Non-standard Color Bars Only</td>
</tr>
<tr>
<td>6</td>
<td>Not Used</td>
<td>OFF</td>
<td>Leave OFF</td>
</tr>
<tr>
<td>7</td>
<td>Not Used</td>
<td>OFF</td>
<td>Leave OFF</td>
</tr>
<tr>
<td>8</td>
<td>Not Used</td>
<td>OFF</td>
<td>Leave OFF</td>
</tr>
</tbody>
</table>

b. Confirm that the remaining switch settings are using default settings.

c. For the 16-Position Rotary HD Resolution Select Switch, set the rotary switch (video selection) to position **8** for the AVS-2610 USB video encoder to encode video stream in a proper progressive mode.
Create Policies in the IEM for Each Document Camera

A policy must be created in the IEM and then applied to the device in order for the document camera to stream video from the dongle to the agents. Each document camera requires a separate policy because the policy contains configuration information just for the document camera connected to that particular IEC.

To create and apply a policy for the document camera, follow the steps below. Use the parameters in the table below when creating the policy to ensure optimal video quality. The parameters have been certified by the RE development team and are optimized for the System Dimension AVS 2610 USB video encoder.

Note

The port specified in the IEM policy should not be used by any other program on the agent’s desktop.

<table>
<thead>
<tr>
<th>Key</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>encoder.target:</td>
<td>null</td>
<td>For unicast, use “null” for the value</td>
</tr>
<tr>
<td>encoder.port:</td>
<td>a port number between 31001 and 31500</td>
<td>Each kiosk should have its own port. The port specified in the IEM policy should not be used by any other program on the agent’s desktop. The port specified in the IEM policy should be opened (i.e. not block by a firewall) on the agent’s desktop.</td>
</tr>
<tr>
<td>encoder.videoSource:</td>
<td>0</td>
<td>Using HDMI as video source</td>
</tr>
<tr>
<td>encoder.videoMode:</td>
<td>1</td>
<td>Encoding video in HD mode</td>
</tr>
<tr>
<td>encoder.protocol:</td>
<td>0</td>
<td>Setting network protocol to UDP</td>
</tr>
<tr>
<td>encoder.moduleType:</td>
<td>0</td>
<td>Setting video encoder device to USB dongle</td>
</tr>
<tr>
<td>encoder.isProgressive:</td>
<td>0</td>
<td>Encoding video as progressive</td>
</tr>
<tr>
<td>encoder.outputFrameRate:</td>
<td>0</td>
<td>Setting output frame rate to 15 fps</td>
</tr>
</tbody>
</table>
## Configure the Document Camera

### Step 1
Go to the IEM.

### Step 2
Click **Policies** in the left pane.

### Step 3
Click **New Policy** in the right pane.

### Step 4
In the Create New Policy dialog box, enter a name for the policy.

### Step 5
Click **Create**.

### Step 6
Find the policy and double-click the icon in the center pane.

### Step 7
Click the **Policy** tab within the policy to display the settings available.

### Step 8
Choose **application > data**.

### Step 9
Click the icon within the Value column to open the Application Data Editor dialog box.

### Step 10
Click the + button in the lower left corner of the dialog box.

### Step 11
In the key field, enter `encoder.target`.

### Step 12
In the value field, enter `null`.

### Step 13
In the key field, enter `encoder.port`.

### Step 14
In the value field, enter a port of this kiosk. Each kiosk should have its own port.

**Tip** For the port assignment, it is recommended to use a port number between 31001 and 31500.

### Step 15
In the key field, enter `encoder.videoSource`.

### Step 16
In the value field, enter `0`.

### Step 17
In the key field, enter `encoder.videoMode`.

### Step 18
In the value field, enter `1`.

### Step 19
In the key field, enter `encoder.protocol`.

### Step 20
In the value field, enter `0`.

### Step 21
In the key field, enter `encoder.moduleType`.

### Step 22
In the value field, enter `0`.

### Step 23
In the key field, enter `encoder.isProgressive`.

### Step 24
In the value field, enter `0`.

### Step 25
In the key field, enter `encoder.outputFrameRate`.

### Table

<table>
<thead>
<tr>
<th>Key</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>encoder.outputResolution</td>
<td>1</td>
<td>Setting output resolution to 1280x720p</td>
</tr>
<tr>
<td>encoder.inputFrameRate</td>
<td>0</td>
<td>Setting output frame rate to 15 fps</td>
</tr>
<tr>
<td>encoder.inputResolution</td>
<td>0</td>
<td>Setting output resolution to 1920x1080p</td>
</tr>
<tr>
<td>encoder.streamType</td>
<td>1</td>
<td>Setting video-in stream to TS</td>
</tr>
<tr>
<td>encoder.audioBitRate</td>
<td>0</td>
<td>No audio-in stream</td>
</tr>
<tr>
<td>encoder.h264Profile</td>
<td>0</td>
<td>Using baseline profile for encoding</td>
</tr>
<tr>
<td>encoder.maximumOutputBitRate</td>
<td>2000</td>
<td>Recommended video-out bitrate</td>
</tr>
<tr>
<td>encoder.minimumOutputBitRate</td>
<td>2000</td>
<td>Recommended video-out bitrate</td>
</tr>
<tr>
<td>encoder.averageOutputBitRate</td>
<td>2000</td>
<td>Recommended video-out bitrate</td>
</tr>
</tbody>
</table>
Step 26  In the value field, enter 0.
Step 27  In the key field, enter encoder.inputFrameRate.
Step 28  In the value field, enter 0.
Step 29  In the key field, enter encoder.outputResolution.
Step 30  In the value field, enter 1.
Step 31  In the key field, enter encoder.inputResolution.
Step 32  In the value field, enter 0.
Step 33  In the key field, enter encoder.streamType.
Step 34  In the value field, enter 1.
Step 35  In the key field, enter encoder.audioBitRate.
Step 36  In the value field, enter 0.
Step 37  In the key field, enter encoder.h264Profile.
Step 38  In the value field, enter 0.
Step 39  In the key field, enter encoder.averageOutputBitRate.
Step 40  In the value field, enter 2000.
Step 41  In the key field, enter encoder.minimumOutputBitRate.
Step 42  In the value field, enter 2000.
Step 43  In the key field, enter encoder.maximumOutputBitRate.
Step 44  In the value field, enter 2000.
Step 45  Click Ok.
Step 46  Click Apply.
    Now you will apply this policy to the IEC.
Step 47  Click Devices.
Step 48  In the center pane, double-click a device’s icon.
Step 49  Click the Policies tab.
Step 50  In the Available policies list, choose the policy created for the document camera.
Step 51  Click the Green Arrow.
    The policy now appears in the Applied policies list.
Step 52  Click Apply.
Step 53  Click Close.
Step 54  Now you need to apply the new policy to the IEC. Find the particular IEC device and click the Policies tab. Select the new policy from the Available policies list. Click the green arrow to move the policy from the left pane (Available policies) to the right pane (Applied policies). Click Apply to save the policy enforcement.
Reboot IEC from REAC

After you set up the document camera and configure it in the IEM, you need to reboot the IEC that is connected to that document camera. In REAC, choose the kiosk for that IEC in the Kiosk tab and click the Restart button.