



Document Camera Configuration

June 13, 2016

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.

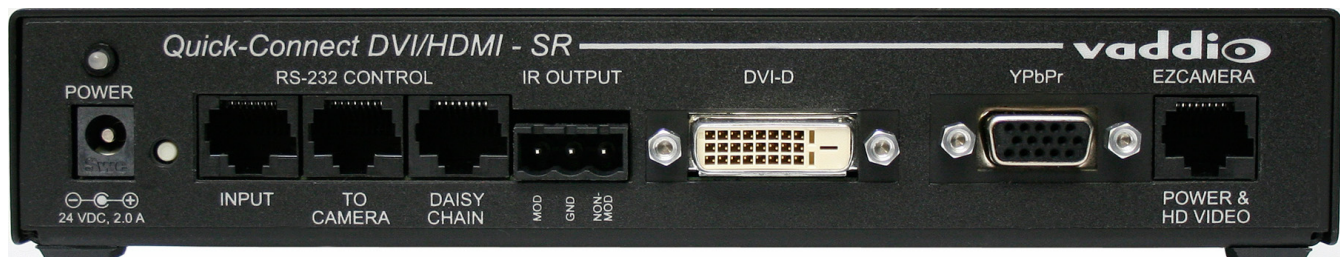
The Vaddio CeilingVIEW™ HD-18 DOCCAM camera is designed for use with high definition video conferencing codecs, HD monitors, and HD presentation applications where image quality and resolution are critical. The camera features an 18X optical zoom lens and is built around a 1/3”, 1.3 Megapixel CCD image 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).

Figure B-1 Ceiling Mounted Camera



Figure B-2 DocCam SR Module Control Unit



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:

- a. Install Java Runtime Environment (JRE) version 7 on each agent's desktop.
- b. Download the snapshotapp-dist.zip file from REAC and install it on each agent's desktop. Refer to Appendix D: "Document Camera Application Installation and Configuration" of the *Cisco Remote Expert Manager eREAD User Guide* for instructions.
- 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:

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- 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.

Figure B-3 Hardware Connection Diagram

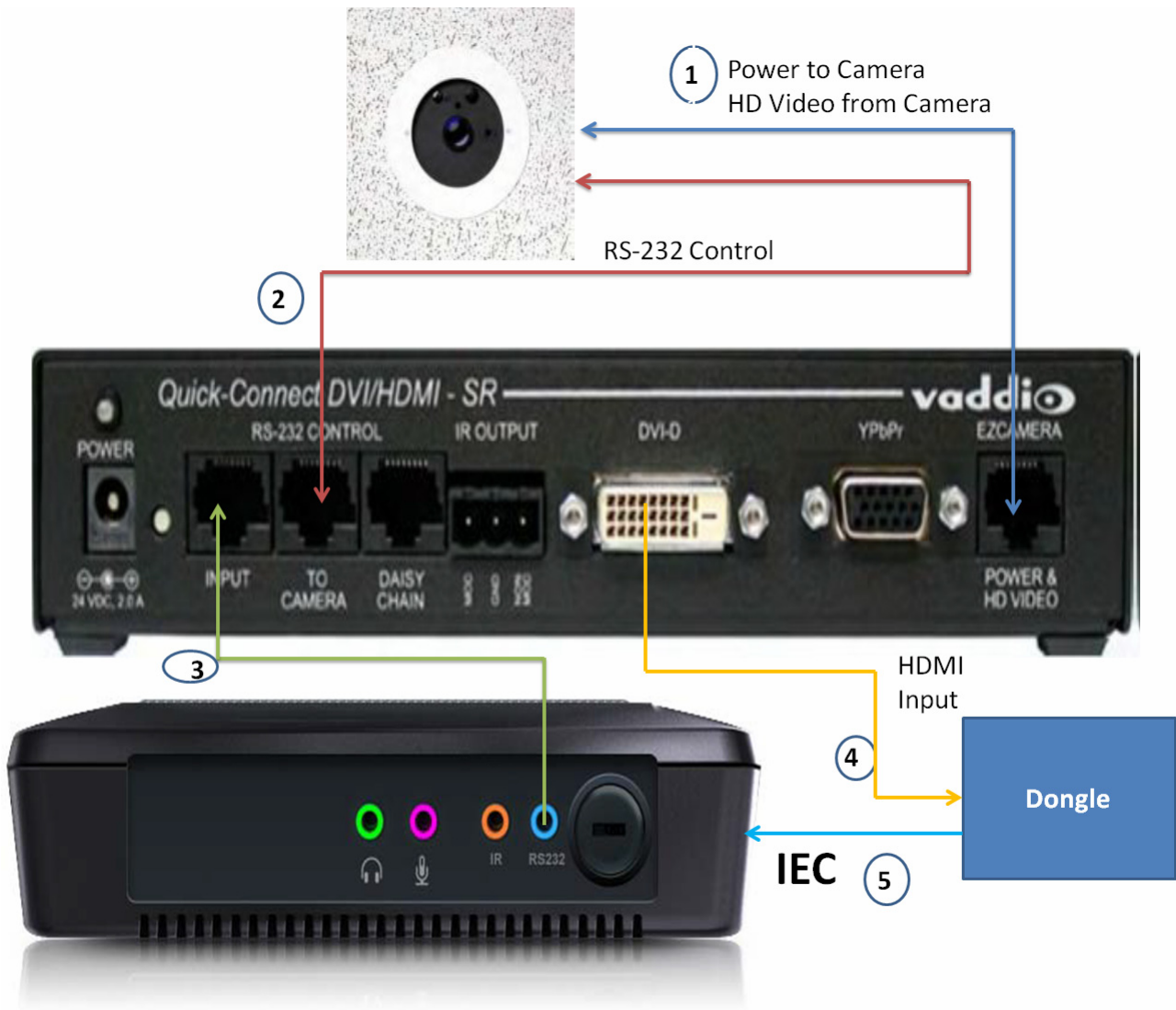


Table B-1 Cable Connection Details for the Above Diagram

Number	Connection	Purpose	Cable
1	EZCamera Power & HD Video Port	Supplies power to camera and returns HD video from the camera	CAT-5e Ethernet cable
2	SR Interface to Camera	RS-232 control to and from camera and IR signals returned from the camera	CAT-5e Ethernet cable

Number	Connection	Purpose	Cable
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

Figure B-4 Cables for RS-232 Control Input



Step 6 Familiarize yourself with the components of the document camera using the photo and table below.

Figure B-5 Document Camera Components



Table B-2 Document Camera Components



Note The following information appears on a label on the back of the camera enclosure back box.

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

Configure the Document Camera

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.

Figure B-6 Document Camera Switch Settings

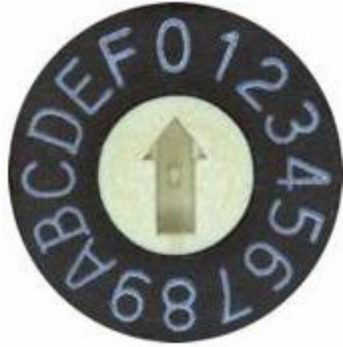
DIP SWITCH SETTINGS								VIDEO SELECT			
IR ON	9600 bps	ALTERNATE IR REMOTE OFF	LASER ON	TEST BARS OFF	6 OFF	7 OFF	8 OFF	0	720p/59.94	8	1080p/25
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1	1080i/59.94	9	1024 x 768/60 RGBHV
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2	1080p/59.94	A	—
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	3	1080p/60	B	—
IR OFF	38400 bps	ON	OFF	ON	—	—	—	4	720p/50	C	—
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5	1080i/50	D	—
1	2	3	4	5	6	7	8	6	1080p/50	E	1280 x 800/60 RGBHV
								7	1080p/30	F	1680 x 1050/60 RGBHV

Table B-3 DIP Switch Setting

Switch	Function	Default	Description
1	IR ON/OFF	ON	<ul style="list-style-type: none"> “ON” for using an IR remote to control the camera “OFF” for using RS-232 commands to control camera control
2	Baud Rate	9600 bps	9600 bps should work with most environments
3	Alternate IR Remote	OFF	“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.
4	Laser Pointer	ON	<ul style="list-style-type: none"> “ON” for enabling the Laser Pointer feature “OFF” for disabling the Laser Pointer feature
5	Test Bars	OFF	Convenience, Non-standard Color Bars Only
6	Not Used	OFF	Leave OFF
7	Not Used	OFF	Leave OFF
8	Not Used	OFF	Leave OFF

- 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.

Figure B-7 Document Camera Rotary Switch



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 B-4 Document Camera Parameters

Key	Value	Description
encoder.target:	null	For unicast, use "null" for the value
encoder.port:	a port number between 31001 and 31500	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.
encoder.videoSource:	0	Using HDMI as video source
encoder.videoMode:	1	Encoding video in HD mode
encoder.protocol:	0	Setting network protocol to UDP
encoder.moduleType:	0	Setting video encoder device to USB dongle
encoder.isProgressive:	0	Encoding video as progressive
encoder.outputFrameRate:	0	Setting output frame rate to 15 fps

Key	Value	Description
encoder.outputResolution:	1	Setting output resolution to 1280x720p
encoder.inputFrameRate:	0	Setting output frame rate to 15 fps
encoder.inputResolution:	0	Setting output resolution to 1920x1080p
encoder.streamType:	1	Setting video-in stream to TS
encoder.audioBitRate:	0	No audio-in stream
encoder.h264Profile:	0	Using baseline profile for encoding
encoder.maximumOutputBitRate:	2000	Recommended video-out bitrate
encoder.minimumOutputBitRate:	2000	Recommended video-out bitrate
encoder.averageOutputBitRate:	2000	Recommended video-out bitrate

- 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**.

- 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.
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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.