VADDIO

Camera and Electronic Products for Integrators

CEILINGVIEW™ HD

High Definition Ceiling Mounted Visualizer System

OVERVIEW:

The Vaddio™ CeilingVIEW HD (Figure 1) is a high definition ceiling visualizer designed for use with high definition videoconferencing codecs, HD monitors and presentation applications where image quality and resolution are critical. The CeilingVIEW HD can be configured for 16:9 HD resolutions of 1080i or 720p when using the analog component video outputs (Y/Pb/Pr), or with 4:3 standard definition video resolution with Y/C and composite video outputs. Equipped with a 10X optical motorized zoom lens and 12X digital zoom range, the camera has a 120X total zoom capability. The 1/3" CMOS image sensor has approximately 2-million pixels and provides precise color reproduction and edge focus which is essential for displaying images on a large format HD monitor or for critical image transmission through a HD videoconferencing system.

Vaddio's active EZCamera™ cabling system uses high speed differential signaling (HSDS) for the video signals from the camera module to the Quick-Connect™ CV HD/SD interface as opposed to baluns. HSDS gives this system high definition and standard definition video capability, superior video quality over Cat. 5 cabling and the ability to adjust the video signal depending on the length of the cabling used. The EZCamera series cabling system delivers either high definition or standard definition video up to 400 feet over standard Cat. 5 cable. The camera also features threaded inserts to attach a single-gang conduit box over the RJ-45 connectors when conduit is required for installation.

Overall, the CeilingVIEW HD is suitable for applications such as corporate boardrooms, auditoriums of teaching hospitals, and distance-learning applications in which clear, high definition images are required. The CeilingVIEW HD is unmatched for price and performance as compared to other ceiling mounted visualizers available today.

INTENDED USE:

Before operating the CeilingVIEW HD system, please read the entire manual thoroughly. The CeilingVIEW HD visualizer was designed, built and tested for use indoors and with the provided power supply. The use of a power supply other than the one provided or outdoor operation has not been tested and could damage the electronics and/or create a potentially unsafe operating condition.

IMPORTANT SAFEGUARDS:

Read and understand all instructions before using. Do not operate the system if it has been dropped or damaged. In this case, a Vaddio technician must examine the product before operating. To reduce the risk of electric shock, do not immerse in water or other liquids and avoid extremely humid conditions.

Use only the power supply (or power supplies) provided with the CeilingVIEW. Use of any unauthorized power supply will void any and all warranties.

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UNPACKAGING – SYSTEM COMPONENT LISTS
Carefully remove all parts from the packaging and identify the following parts:

CeilingVIEW HD, Part Number 999-3008-000 (NTSC) includes:
- One (1) CeilingVIEW HD Camera Enclosure
- One (1) White Trim Ring with two (2) white screws
- One (1) Vaddio IR Remote Controller
- One (1) Quick-Connect CV HD/SD Interface
- One (1) PowerRite 24VDC, 2A Power Supply
- One (1) AC Cord Set for North America
- Two (2) Adjustable ceiling tile support rails with two (2) knurled knobs
- One (1) RJ-45 to DB9 EZCamera Control Adapter (998-1001-232)
- Installation and User Guide (341-665)

CeilingVIEW HD, Part Number 999-3008-001 (PAL) includes:
- One (1) CeilingVIEW HD Camera Enclosure
- One (1) White Trim Ring with two (2) white screws
- One (1) Vaddio IR Remote Controller
- One (1) Quick-Connect CV HD/SD Interface
- One (1) PowerRite 24VDC, 2A Power Supply
- One (1) Euro AC Cord
- One (1) UK AC cord Set
- Two (2) Adjustable ceiling tile support rails with two (2) knurled knobs
- One (1) RJ-45 to DB9 EZCamera Control Adapter (998-1001-232)
- Installation and User Guide (341-665)

INSTALLATION INSTRUCTIONS:
The CeilingVIEW HD visualizer is an integrated document/object camera specifically designed for installation in a suspended ceiling tile above a conference table, lectern or work surface. Recommended ceiling height range is between 8' and 12' (2.44m to 3.66m).
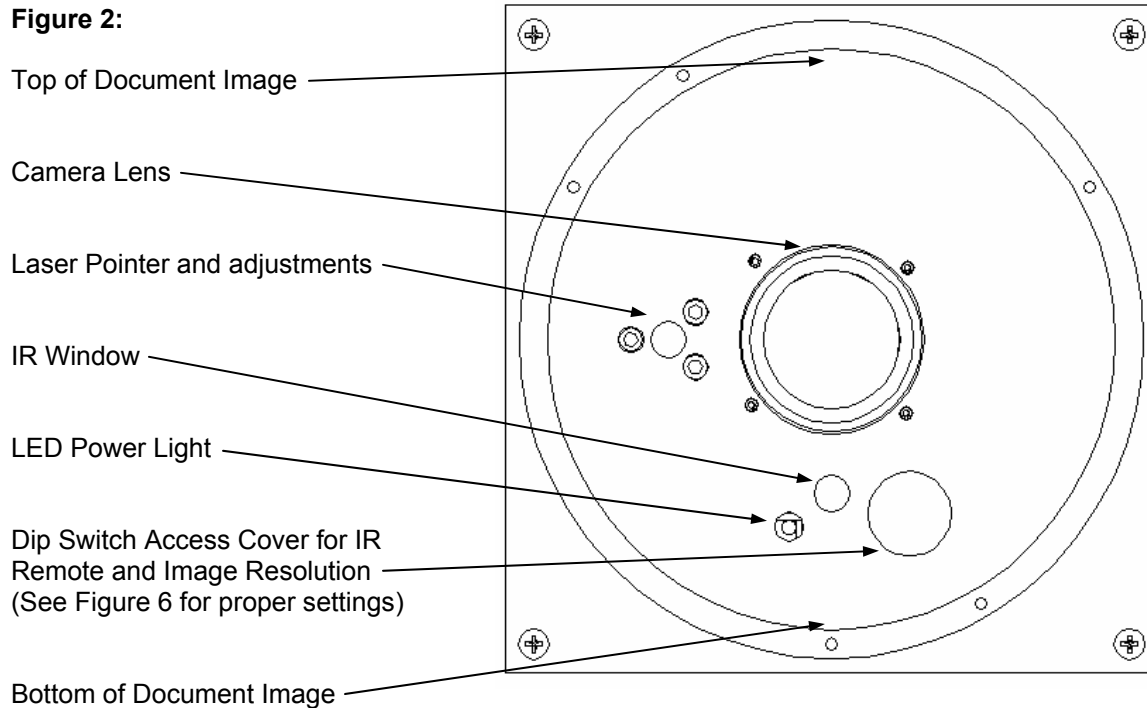

Before Starting the Installation
- Before starting the installation of the CeilingVIEW HD visualizer, check above the ceiling where you plan to install the camera and make sure the area is clear of obstructions and confirm that there is adequate room for the camera enclosure.
- When terminating your Cat. 5 cabling, make sure that you test each cable for proper termination of all ends with a Cat. 5 continuity tester.
- All above-ceiling work must conform to local building codes and should be performed by qualified personnel.
- The camera module enclosure and tile support rails allow for superior flexibility and positioning freedom when used with 2'x2' and 2'x4' ceiling tiles. The camera does not have to be mounted in the center of the tile.
- For cutting ease, remove the ceiling tile and place on a suitable and safe work surface.
- If the camera is to be controlled as part of a multi-camera, daisy chain system please use the CeilingVIEW HD as the last camera in the control chain.

Camera Module
For video reference, LED power light, IR window and Dip Switch cover will be oriented to the bottom of the image displayed (shown in Figure 2). Take this into consideration when positioning the camera module. The supplied mounting rails may need to be used for additional support of the camera on the ceiling tile to distribute the weight of the camera into the grid and avoid tile warping.
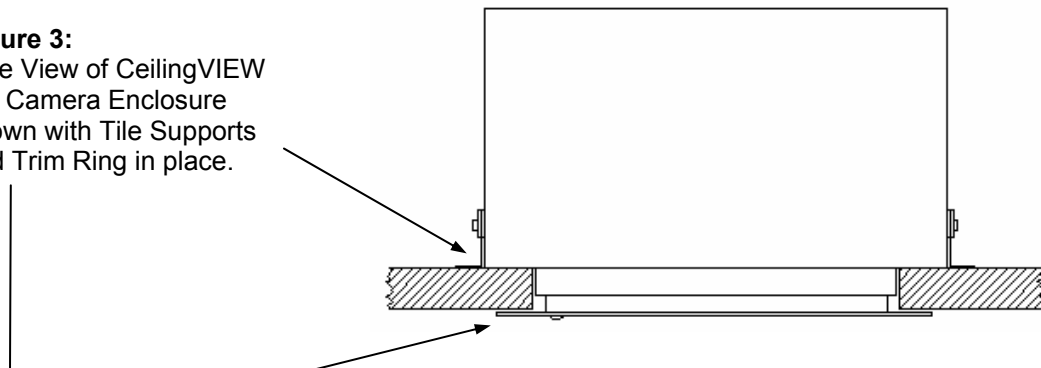
Figure 2:

Top of Document Image

Camera Lens

Laser Pointer and adjustments

IR Window

LED Power Light

Dip Switch Access Cover for IR
Remote and Image Resolution
(See Figure 6 for proper settings)

Bottom of Document Image

**Step-by-Step Assembly Instructions:**

1. Attach a string or plumb bob to the ceiling tile with a thumbtack.
2. Position the string directly over the table or work surface to allow easy document and object positioning.
3. Using a sharp utility knife, score a 5-3/4" diameter circle into the front of the tile centered on the string.
4. Carefully cut out the 5-3/4" hole.
5. Place the tile support rails on the backside of the tile and center over the hole. Carefully place camera into the cutout hole from the back of tile (see Figure 3).

Figure 3:
Side View of CeilingVIEW
HD Camera Enclosure
shown with Tile Supports
and Trim Ring in place.

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6. Using the supplied thumbscrews and washers, attach the support rails to the CeilingVIEW camera (see Figure 4). Place rail edge between two washers and tighten thumbscrew securely. Repeat for the other rail. *NOTE:* The thumbscrew sits on top of the rail, not through the holes on the rail.

Figure 4:
Side View of CeilingVIEW
HD with Tile Support
Brace placement
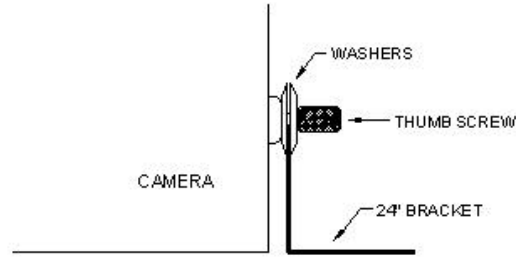
7. Two Cat. 5 cables (plenum rated as building codes dictate) are run from the ceiling location where the camera is mounted, to where the Quick-Connect Box is located near the main rack or head-end equipment.   Either HD analog component (Y, Pb, Pr) or SD composite and Y/C are active. Connections on the CeilingVIEW HD are shown in Figure 5.
NOTE: If you are terminating your own Cat. 5 cables, make sure to test all cables with a continuity tester to confirm proper pin-outs.
8. For the Quick-Connect Box connections to and from the camera module, see Figure 5.
9. To finish up the installation, the camera and ceiling tile should be carefully replaced in the suspended ceiling at this time. Carefully move the trim ring into position on the bottom of the ceiling tile and secure with the two supplied white screws.
10. With the Cat. 5 cabling connected to the proper ports at both the Camera Enclosure and Quick-Connect CV HD/SD interface, review the dip switch settings (Figure 6) and set the camera to output the desired signal. Connect the Vaddio PowerRite power supply. Plug the AC cord into an outlet. The camera zoom will home into position and the video output (either HD component or SD composite and Y/C as selected with the dip switch settings) signals will be live and viewable after the camera is fully initialized.   To change the output resolution or any dip switch setting, first unplug the power supply, change the dipswitch setting and re-power the Quick-Connect CV HD/SD. If using a Polycom or TANDBERG IR Remote, set dip switches 1 & 2 accordingly to allow momentary laser pointer on the Tilt Down command.
NOTE: Use of a power supply other than the provided Vaddio power supply for this device will void the warranty and may cause camera and equipment damage.

Figure 5: System Configuration
The main components of the CeilingVIEW HD are the camera module and Quick-Connect interface. Basic system connectivity is outlined below. The Quick-Connect CV HD/SD interface can be installed on the rack mount adapter used also by the Quick-Connect for the WallVIEW 300 PTZ part # 999-6000-002.

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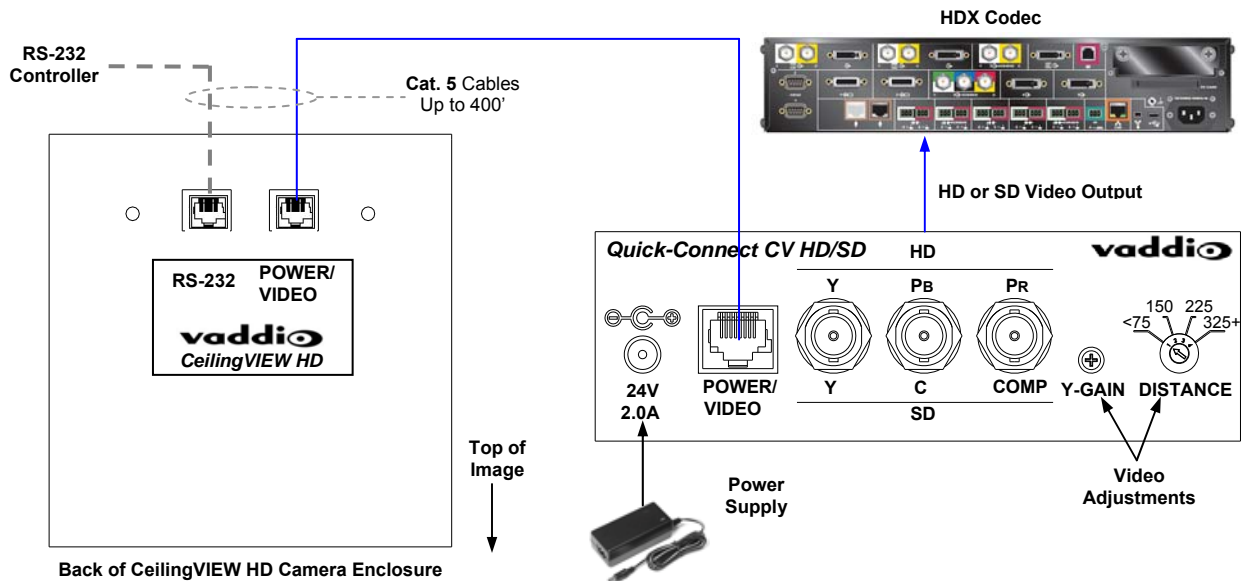
Controlling the Camera

A unique feature of the CeilingVIEW HD allows the camera's zoom functions (Zoom In and Out) and intermittent laser (Tilt Down) to be controlled by either a Polycom® or TANDBERG® remote control. In addition, the visualizer can be used with either the Vaddio IR remote control supplied or via RS-232 using VISCA control protocol (see VISCA Command Set information at the back of the manual). The CeilingVIEW HD will respond to all three IR remotes concurrently.

Dip Switch Settings

Set the dipswitches to the desired signal/function and then apply power to the system. To make any changes, remove power from the system, make the change and re-apply power to the system.

| Description / Dip Switch	1	2	3	4	5	6
1080i/59.94 Camera Output Resolution	*	*	DN	DN	DN	DN
1080i/50 Camera Output Resolution	*	*	DN	DN	DN	UP
720p/59.94 Camera Output Resolution	*	*	DN	DN	UP	DN
720p/50 Camera Output Resolution	*	*	DN	DN	UP	UP
SD SQ NTSC (std. def. squeezed)	*	*	DN	UP	DN	DN
SD SQ PAL (std. def. squeezed)	*	*	DN	UP	DN	UP
SD Crop NTSC (std. def. cropped)	*	*	DN	UP	UP	DN
SD Crop PAL (std. def. cropped)	*	*	DN	UP	UP	UP
CeilingVIEW HD Laser Pointer "MOMENTARY ON" will be activated by the Polycom or TANDBERG IR Remote Controller "TILT DOWN" command	DN	UP	*	*	*	*
CeilingVIEW HD Laser Pointer "MOMENTARY ON" will not be activated by the Polycom or TANDBERG IR Remote Controller "TILT DOWN" command	DN	DN	*	*	*	*
Disable All Polycom and TANDBERG IR Remote Commands	UP	*	*	*	*	*

* - Position not applicable - Output Resolution is independent from the Laser Pointer.

Figure 6: Vaddio IR Remote

Programming the Remote:
1.   Install 3 "AAA" batteries into the remote
2.   Press and hold POWER & FREEZE for 5 seconds

Function	Description
POWER	Camera on/off
ZOOM	IN (tele) OUT (wide)
FOCUS	AUTO: Auto Focus Mode ON NEAR: Manual Focus Near FAR: Manual Focus Far
LASER	ON: On/Off toggle MOM: Turns on Laser for five seconds - Momentary
BRIGHT	UP: Brightness up DOWN: Brightness down
PRESET	Six (6) presets - 0 though 5
SET	Sets Zoom Presets
W/BAL	One Touch White Balance
BKLIGHT	Back Light Compensation
B/W	Black and White Mode (color off)
POS/NEG	Positive/Negative - Art Mode
FREEZE	Freeze Frame/Image Effect
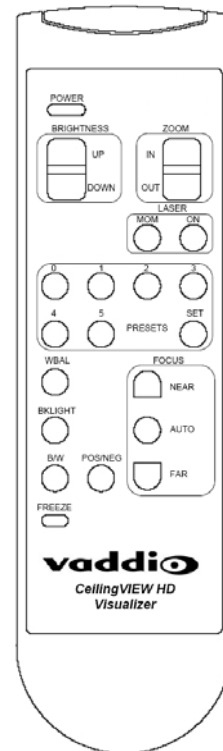
Setting Zoom Presets (Vaddio Remote):
1.   Zoom the camera lens to the desired position.
2.   Press and hold the SET button for one second. The blue LED will blink for approximately 5 seconds.
3.   Press button labeled 0 through 5 within the 5 seconds. The Blue LED on camera will stop blinking.
4.   To Recall Presets, press on the PRESET buttons labeled 0 thru 5.

Control Systems
If you are using a control system (i.e. Crestron®, AMX®, etc.) plug the Cat. 5 cable from the RS-232 IN jack on the camera to your control system using the Cat. 5 to DB-9 serial adapter supplied with the CeilingVIEW HD. Daisy Chain Note: Use the CeilingVIEW HD as the last camera in the control chain when daisy chaining cameras together, as there is no RS-232 output on the Camera Module.

COMMAND LIST
Vaddio supplies this control specification for the CeilingVIEW HD Visualizer.

Communication Specification:
Communication Speed: 9600 bps (default)
Start bit: 1
Stop bit: 1
Data bits: 8
Parity: None

Communication Example:
For the VISCA Packet "8x 01 04 07 03 FF" (CAM_Zoom_Wide), "x" corresponds with the number and order of the camera in the control chain (daisy chain) where x = 1 for the first camera, x = 2 for the second camera, etc…

VISCA Command Set

Command Set	Command	Command Packet	Comments
AddressSet	Broadcast	88 30 01 FF	
IF_Clear	Broadcast	88 01 00 01 FF	
CommandCancel		8x 2p FF	P: Socket No. (=1or2)
CAM_Power	On	8x 01 04 00 02 FF	Power ON/OFF
	Off	8x 01 04 00 03 FF	
CAM_Zoom	Stop	8x 01 04 07 00 FF	
	Tele(Standard)	8x 01 04 07 02 FF	
	Wide(Standard	8x 01 04 07 03 FF	
	Tele(Variable)	8x 01 04 07 2p FF	P=0 (Low) to 7 (High)
	Wide(Variable)	8x 01 04 07 3p FF	
	Direct	8x 01 04 47 0p 0q 0r 0s FF	Pqrs: Zoom Position
CAM_Dzoom	On	8x 01 04 06 02 FF	Digital Zoom ON/OFF
	Off	8x 01 04 06 03 FF	
	Combine Mode	8x 01 04 36 00 FF	Opt/Dig Zoom Combined
	Separate Mode	8x 01 04 36 01 FF	Opt/Dig Zoom Separate
	Stop	8x 01 04 06 00 FF	
	Tele(Variable)	8x 01 04 06 2p FF	P=0(Low) to 7 (High)
	Wide(Variable)	8x 01 04 06 3p FF	
	Direct	8x 01 04 46 00 00 0p 0q FF	Pq: D-Zoom Position
CAM_Focus	Stop	8x 01 04 08 00 FF	
	Far(Standard)	8x 01 04 08 02 FF	
	Near(Standard)	8x 01 04 08 03 FF	
	Far(Variable)	8x 01 04 08 2p FF	P=0 (Low) to 7 (High)
	Near(Variable)	8x 01 04 08 3p FF	
	Direct	8x 01 04 48 0p 0q 0r 0s FF	Pqrs: Focus Position
	Auto Focus	8x 01 04 38 02 FF	AF ON/OFF
	Manual Focus	8x 01 04 38 03 FF	
	Auto/Manual	8x 01 04 38 10 FF	
	One Push Trigger	8x 01 04 18 01 FF	One Push AF Trigger
	Infinity	8x 01 04 18 02 FF	Forced Infinity
	Near Limit	8x 01 04 28 0p 0q 0r 0s FF	Pqrs: Focus Near Limit Position
CAM_AFMode	Normal AF	8x 01 04 57 00 FF	AF Movement Mode
	Interval AF	8x 01 04 57 01 FF	
	Zoom Trigger AF	8x 01 04 57 02 FF	
	Active/Interval Time	8x 01 04 27 0p 0q 0r 0s FF	Pq: Active Time, rs: Interval
CAM_ZoomFocus	Direct	8x 01 04 47 0p 0q 0r 0s	Pqrs: Zoom Position
		0t 0u 0v 0w FF	Tuvw: Focus Position

CAM_WB	Auto	8x 01 04 35 00 FF	Normal Auto
	Indoor	8x 01 04 35 01 FF	Indoor mode
	Outdoor	8x 01 04 35 02 FF	Outdoor mode
	One Push WB	8x 01 04 35 03 FF	One Push WB mode
	Manual	8x 01 04 35 05 FF	Manual Control mode
	One Push Trigger	8x 01 04 10 05 FF	One Push WB Trigger
CAM_Rgain	Reset	8x 01 04 03 00 FF	Manual Control of R Gain
	Up	8x 01 04 03 02 FF	
	Down	8x 01 04 03 03 FF	
	Direct	8x 01 04 43 00 00 0p 0q FF	Pq: R Gain
CAM_Bgain	Reset	8x 01 04 04 00 FF	Manual Control of B Gain
	Up	8x 01 04 04 02 FF	
	Down	8x 01 04 04 03 FF	
	Direct	8x 01 04 44 00 00 0p 0q FF	Pq: B Gain
CAM_AE	Full Auto	8x 01 04 39 00 FF	Full Auto
	Manual	8x 01 04 39 03 FF	Manual Control mode
	Shutter Priority	8x 01 04 39 0A FF	Shutter Priority Auto Exp
	Iris Priority	8x 01 04 39 0B FF	Iris Priority Auto Exp
	Bright	8x 01 04 39 0D FF	Bright Mode (Manual)
	SpotLight	8x 01 04 39 10 FF	Spot light mode
CAM_SlowShutter	Auto	8x 01 04 5A 02 FF	Auto Slow Shutter ON/OFF
	Manual	8x 01 04 5A 03 FF	
	AutoSlowShutterLimit	8x 01 04 2A 0p 00 FF	59.94 Hz system: p=0 (1/60), 1 (1/30), 2 (1/15), 3 (1/8), 4 (1/4), 5 (1/2) 50 Hz system: p=0 (1/50), 1 (1/25), 2 (1/12), 3 (1/6), 4 (1/3), 5 (1/2)
CAM_Shutter	Reset	8x 01 04 0A 00 FF	Shutter Setting
	Up	8x 01 04 0A 02 FF	
	Down	8x 01 04 0A 03 FF	
	Direct	8x 01 04 4A 00 00 0p 0q FF	Pq: Shutter Position
CAM_Iris	Reset	8x 01 04 0B 00 FF	Iris Setting
	Up	8x 01 04 0B 02 FF	
	Down	8x 01 04 0B 03 FF	
	Direct	8x 01 04 4B 00 00 0p 0q FF	Pq: Iris Position
CAM_Gain	Reset	8x 01 04 0C 00 FF	Gain Setting
	Up	8x 01 04 0C 02 FF	
	Down	8x 01 04 0C 03 FF	
	Direct	8x 01 04 4C 00 00 0p 0q FF	Pq: Gain Position
CAM_Bright	Reset	8x 01 04 0D 00 FF	Bright Setting
	Up	8x 01 04 0D 02 FF	
	Down	8x 01 04 0D 03 FF	
	Direct	8x 01 04 4D 00 00 0p 0q FF	Pq: Bright Position
CAM_ExpComp	On	8x 01 04 3E 02 FF	Exp. Compensation on/off
	Off	8x 01 04 3E 03 FF	
	Reset	8x 01 04 0E 00 FF	Exp. Comp. Amt Setting
	Up	8x 01 04 0E 02 FF	
	Down	8x 01 04 0E 03 FF	
	Direct	8x 01 04 4E 00 00 0p 0q FF	Pq: ExpComp Position
CAM_Backlight	On	8x 01 04 33 02 FF	Backlight Comp. ON/OFF
	Off	8x 01 04 33 03 FF	
CAM_SpotAE	On	8x 01 04 59 02 FF	Spot Auto Exp. Setting
	Off	8x 01 04 59 03 FF	
	Position	8x 01 04 29 0p 0q 0r 0s FF	Pq: X(0 to F), rs: Y(0 to F)
CAM_Aperture	Reset	8x 01 04 02 00 FF	Aperture Control
	Up	8x 01 04 02 02 FF	
	Down	8x 01 04 02 03 FF	
	Direct	8x 01 04 42 00 00 0p 0q FF	Pq: Aperture Gain
CAM_Gamma	Normal	8x 01 04 5B 00 FF	Gamma Setting
	Cinema Type 1	8x 01 04 5B 01 FF	
	Cinema Type 2	8x 01 04 5B 02 FF	
CAM_Freeze	On	8x 01 04 62 02 FF	Freeze ON/OFF
	Off	8x 01 04 62 03 FF	
CAM_PictureEffect	Off	8x 01 04 63 00 FF	Picture Effect Setting
	Neg.Art	8x 01 04 63 02 FF	
	B&W	8x 01 04 63 04 FF	
CAM_Memory	Reset	8x 01 04 3F 00 0p FF	P: Memory # (=0 to 5)
	Set	8x 01 04 3F 01 0p FF	
	Recall	8x 01 04 3F 02 0p FF	
CAM_CUSTOM	Reset	8x 01 04 3F 00 7F FF	
	Set	8x 01 04 3F 01 7F FF	
	Recall	8x 01 04 3F 02 7F FF	

CAM_Mute	On	8x 01 04 75 02 FF	Mute ON/OFF
	Off	8x 01 04 75 03 FF	
	On/Off	8x 01 04 75 10 FF	
CAM_KEY Lock	Off	8x 01 04 17 00 FF	Camera control on/off
	On	8x 01 04 17 02 FF	
CAM_ID Write		8x 01 04 22 0p 0q 0r 0s FF	Pqrs: Camera ID (0000-FFFF)
CAM_RegisterValue		8x 01 04 24 mm 0p 0q FF	Mm: Register number (00 to 7F)
			Pp: Register Value (00 to FF)
Vaddio Commands	**Command**	**Command Packet**	**Comments**
CAM_LaserPointer	ON	8x 01 04 2F 02 FF	
	OFF	8x 01 04 2F 03 FF	
	Toggle	8x 01 04 2F 01 FF	

1) After ACK to a One Push White Balance Trigger is sent until the operation is completed, "Not Executable" is sent as a reply when any other commands are received.
2) Bright can be set only in Full Auto mode or Shutter Priority mode.

INQUIRY LIST

Inquiry Command	Command Packet	Inquiry Packet	Comments
CAM_PowerInq	8x 09 04 00 FF	Y0 50 02 FF	On
		Y0 50 03 FF	Off
CAM_ZoomPosInq	8x 09 04 47 FF	Y0 50 0p 0q 0r 0s FF	Pqrs: Zoom Position
CAM_DZoomLimitInq	8x 09 04 26 FF	Y0 50 0p FF	P=0 (x1), 1 (x1/5), 2 (x2), 3 (x4), 4 (x8), 5 (x12)
CAM_FocusModeInq	8x 09 04 38 FF	Y0 50 02 FF	Auto Focus
		Y0 50 03 FF	Manual Focus
CAM_FocusPosInq	8x 09 04 48 FF	Y0 50 0p 0q 0r 0s FF	Pqrs: Focus Position
CAM_FocusNearLimitInq	8x 09 04 28 FF	Y0 50 0p 0q 0r 0s FF	Pqrs: Focus Near Limit Position
CAM_AFModeInq	8x 09 04 57 FF	Y0 50 00 FF	Normal AF
		Y0 50 01 FF	Interval AF
		Y0 50 02 FF	Zoom Trigger AF
CAM_AFTimeSettingInq	8x 09 04 27 FF	Y0 50 0p 0q 0r 0s FF	Pq: Active Time, rs: Interval
CAM_WBModeIng	8x 09 04 35 FF	Y0 50 00 FF	Auto
		Y0 50 01 FF	In Door
		Y0 50 02 FF	Out Door
		Y0 50 03 FF	One Push WB
		Y0 50 05 FF	Manual
CAM_RgainInq	8x 09 04 43 FF	Y0 50 00 00 0p 0q FF	Pq: R Gain
CAM_BgainInq	8x 09 04 44 FF	Y0 50 00 00 0p 0q FF	Pq: B Gain
CAM_AEModeInq	8x 09 04 39 FF	y0 50 00 FF	Full Auto
		y0 50 03 FF	Manual
		y0 50 0A FF	Shutter Priority
		y0 50 0B FF	Iris Priority
		y0 50 0D FF	Bright
		y0 50 10 FF	Spot Light
CAM_SlowShutterModeInq	8x 09 04 5A FF	Y0 50 02 FF	Auto
		Y0 50 03 FF	Manual
CAM_ShutterPosInq	8x 09 04 4A FF	Y0 50 00 00 0p 0q FF	Pq: Shutter Position
CAM_IrisPosInq	8x 09 04 4B FF	Y0 50 00 00 0p 0q FF	Pq: Iris Position
CAM_GainPosInq	8x 09 04 4C FF	Y0 50 00 00 0p 0q FF	Pq: Gain Position
CAM_BrightPosInq	8x 09 04 4D FF	Y0 50 00 00 0p 0q FF	Pq: Bright Position
CAM_ExpCompModeInq	8x 09 04 3E FF	Y0 50 02 FF	On
		Y0 50 03 FF	Off
CAM_ExpCompPosInq	8x 09 04 4E FF	Y0 50 00 00 0p 0q FF	Pq: ExpComp Position
CAM BacklightModeInq	8x 09 04 33 FF	Y0 50 02 FF	On
		Y0 50 03 FF	Off
CAM_SPotAEPosInq	8x 09 04 59 FF	Y0 50 02 FF	On
		Y0 50 03 FF	Off
CAM_SpotAEPosInq	8x 09 04 29 FF	Y050 0p 0q 0r 0s FF	Pq: X position, rs: Y position
CAM_ApertureInq	8x 09 04 42 FF	Y0 50 00 00 0p 0q FF	Pq: Aperture Gain
CAM_GammaInq	8x 09 04 5B FF	Y0 50 00 FF	Normal
		Y0 50 01 FF	Cinema Type 1
		Y0 50 02 FF	Cinema Type 2

CAM_FreezeModeInq	8x 09 04 62 FF	Y0 50 02 FF Y0 50 03 FF	On Off
CAM_PictureEffectModeInq	8x 09 04 63 FF	Y0 50 00 FF Y0 50 02 FF Y0 50 04 FF	Off Neg.Art B&W
CAM_MemoryInq	8x 09 04 3F FF	Y0 50 pp FF	Pp: Last Recall Memory No.
CAM_MuteModeInq	8x 09 04 75 FF	Y0 50 02 FF y0 50 03 FF	On Off
CAM_KeyLockInq	8x 09 04 17 FF	Y0 50 00 FF y0 50 02 FF	Off On
CAM_IDInq	8x 09 04 22 FF	Y0 50 0p 0q 0r 0s FF	pqrs: Camera ID
CAM_VersionInq	8x 09 00 02 FF	Y0 50 00 20 Mn pq rs tu vw FF	Mnpq: Model Code "(044A)" Rstu: ROM version Vw: Socket Number (=02)
CAM_ReplyIntervalTimeInq	8x 09 04 6A FF	Y0 50 00 00 0p 0p FF	Pp: Interval Time
CAM_RegisterValueInq	8x 09 04 24 mm FF	Y0 50 0p 0p FF	Mm: Register number, pp: Register value
CAM_LaserPointerInq	8x 09 04 2F FF	y0 50 02 FF y0 50 03 FF y0 50 01 FF	ON OFF Toggle

Technical Specifications:

CeilingVIEW HD	
Part Numbers	999-3008-000 (North America), 999-3008-001 (International)
Image Sensor	Sony 1/3-type HD CMOS
Total Number of Pixels	Approx. 2M pixels
Aspect Ratio	HD: 16:9 SD: 4:3 or 16:9
Angle of view (H)	Approx. 50°(wide end) to Approx. 5.4°(tele end)
CeilingVIEW HD Image Sizes • 10X Optical Zoom • HD Resolution - Aspect Ratio 16:9 • Ceiling Height of 9' • Distance to table top 6.5'	• Wide End (zoomed out) measurement = 73" x 41" • Tele End (zoomed in) measurement = 6" x 3.38"
Minimum illumination	12 LUX Typical (F1.8, 50IRE)
Minimum Object Distance	10mm (wide) to 800mm (tele)
Optical Zoom	10 x zoom, f=5.1mm (wide end) to 51 (tele end) F1.8 to F2.1
Digital Zoom	12X (120X Total Zoom)
Signal system	HD: (16:9) : 1080/59.94i, 1080/50i, 720/59.94p, 720/50p, SD: NTSC (crop/squeeze), PAL (crop/squeeze)
Focus System	Full Auto, Manual (near, far)
S/N Ratio	More than 50 dB
Video Output HD	HD: Analog Component Y/Pb/Pr
Video Output SD	VBS:1.0 Vp-p (Sync Negative) & Y/C Output
Sync System	Internal Sync
Camera Control	• RS-232 (VISCA™, baud rate: 9.6 Kb/s, 19.2 Kb/s, 38.4 Kb/s, 1-stop bit) • IR - Responds to Vaddio IR Remote (full functionality), Polycom and TANDBERG IR ZOOM IN and ZOOM OUT commands automatically. • With dip switch control (#2 UP), Polycom and TANDBERG "TILT DOWN" command can activate the Laser Pointer "MOMENTARY ON" command for document positioning
Effects	Freeze, B/W, Negative Art
• **Camera Enclosure**	
Components	Camera Enclosure, White Trim Ring, Mounting Rails and Mounting Hardware
Connectors	One (1) RJ-45 for Video and Power One (1) RJ-45 for RS-232
Camera Enclosure Dimensions	4.85" x 5.75" x 5.75" (H x W x D),
Camera Enclosure Weight	2.4lbs
• **Quick-Connect CV HD/SD**	
Connectors	One (1) RJ-45 for Video and Power 3-BNC: Analog Component Y/Pb/Pr Outputs or SD (Y/C and composite) Outputs **Note: CeilingVIEW HD can output HD or SD Video, but not both concurrently** 5.5mm OD x 2.5 ID Power Connector
Controls	Y-Gain Adjustment Distance Adjustment (for longer Cat. 5 cable runs)
Max Cat. 5 Cable Distance	400'/121.92m between Quick-Connect CV HD/SD and Camera Enclosure
Quick-Connect CV HD/SD Dimensions	1.75" x 5.5" x 3.0" (3.75" with BNC connectors) (H x W x D) 1/3-Rack Width
Quick-Connect CV HD/SD Weight	1.0lbs
Power Supply	24VDC, 2A
Accessories	999-6000-002 Rack Mount Adapter Panel for 1/3-Rack Quick-Connect Interface

vaddio

FCC, ICES-003 Compliance and CE Declaration of Conformity

FC

FCC Part 15 Compliance
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his/her own expense.

Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) This device must accept any interference including interference that may cause undesired operation of the device.

Changes or modifications not expressly approved by Vaddio can affect emission compliance and could void the user's authority to operate this equipment.

Industry Industrie
Canada Canada

ICES-003 Compliance
This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.
Le présent appareil numérique n'emet pas de bruits radioélectriques dépassant les limites applicables aux appareils numeriques de la classe A préscrites dans le Règlement sur le brouillage radioélectrique édicte par le ministère des Communications du Canada.

CE

European Compliance
This product has been evaluated for Electromagnetic Compatibility under the standards for Emissions and Immunity and meets the requirements for E4 environment. This product complies with Class A (E4 environment). In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Standard(s) To Which Conformity Is Declared:
EMC Directive 89/336/EEC

EN 55022A	Conducted and Radiated Emissions
EN 55024	Electromagnetic Compatibility - Immunity
EN 61000-4-2	Electrostatic Discharge Requirements
EN 61000-4-3	Radiated Electromagnetic Field Requirement
EN 61000-4-4	Electrical Fast Transients / Burst Requirements
EN 61000-4-5	Surge Requirements
EN 61000-4-6	Conducted Immunity Requirements
EN 61000-4-8	Power Frequency Magnetic Field Requirements
EN 61000-4-11	Voltage Dips, Interrupts and Fluctuations Requirements

WARRANTY INFORMATION

Hardware* Warranty - One year limited warranty on all parts. Vaddio warrants this product against defects in materials and workmanship for a period of one year from the day of purchase from Vaddio. If Vaddio receives notice of such defects during the warranty period, they will, at their option, repair or replace products that prove to be defective.

Exclusions - The above warranty shall not apply to defects resulting from: improper or inadequate maintenance by the customer, customer applied software or interfacing, unauthorized modifications or misuse, operation outside the normal environmental specifications for the product, use of the incorrect power supply, improper extension of the power supply cable or improper site operation and maintenance.

Vaddio Customer service – Vaddio will test, repair, or replace the product or products without charge if the unit is under warranty and is found to be defective. If the product is out of warranty, Vaddio will test then repair the product or products. The cost of parts and labor charge will be estimated by a technician and confirmed by the customer prior to repair. All components must be returned for testing as a complete unit. Vaddio will not accept responsibility for shipment after it has left the premises.

Return Material Au thorization (RMA) number - Before returning a product for repair or replacement, request an RMA from Vaddio's technical support. Provide a technician with a return phone number, e-mail address, shipping address, and product serial numbers and describe the reason for repairs or returns as well as the date of purchase and proof of purchase. Include your assigned RMA number in all correspondence with Vaddio. Write your assigned RMA number on the shipping label of the box when returning the product. Please see Vaddio's website for current RMA policies and procedures.

Voided w arranty – The warranty does not apply if the original serial number has been removed or if the product has been disassembled or damaged through misuse, accident, modifications, or unauthorized repair. Cutting the power supply cable on the secondary side (low voltage side) to extend the power to the device (camera or controller) voids the warranty for that device.

Shipping an d handling - Vaddio will not pay for inbound shipping transportation or insurance charges or accept any responsibility for laws and ordinances from inbound transit. Vaddio will pay for outbound shipping, transportation, and insurance charges for all items under warranty but will not assume responsibility for loss and/or damage by the outbound freight carrier. If the return shipment appears damaged, retain the original boxes and packing material for inspection by the carrier. Contact your carrier immediately.

Products not under warranty - Payment arrangements are required before outbound shipment for all out of warranty products.
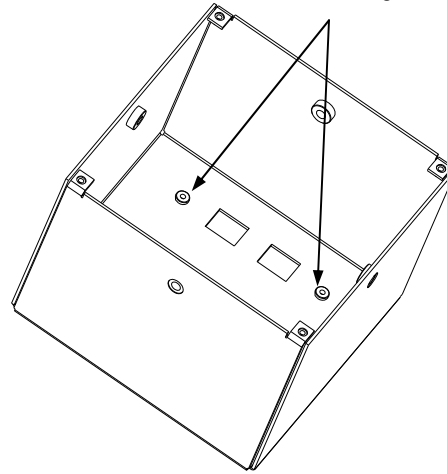
*Vaddio manufactures its hardware products from parts and components that are new or equivalent to new in accordance with industry standard practices.

Appendix 1:
Building Code Compliance

Figure 7:
CV Enclosure with threaded inserts to attach a conduit box to the outside of the CeilingVIEW HD Enclosure

Camera Enclosure:
The Camera Enclosure for the new CeilingVIEW HD features threaded inserts to attach a 1-gang conduit box over the 2-Cat.5 connectors. This is for use in areas of the country with strict building codes pertaining to plenum air space (i.e. Chicago, NYC, etc.) and use of conduit. The RJ-45 connectors for Power/Video and Control are located to fit within the foot print of a 1-gang junction box.

Appendix 2:
Video, Power and Control Pin-outs for the Camera Enclosure

Power/Video on RJ-45 Jack (Figure 8)

#	Pins	
	SD VIDEO	HD VIDEO
1)	Power (+)	Power (+)
2)	Power GND	Power GND
3)	Y+	Y+
4)	C+	PB+
5)	C-	PB-
6)	Y-	Y-
7)	Comp. Video +	PR+
8)	Comp. Video -	PR-

12345678
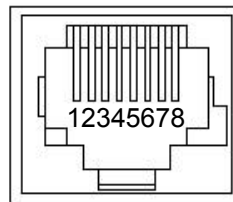
Figure 8:
Power/Video on RJ-45

RS-232 on RJ-45 Jack (Figure 9)

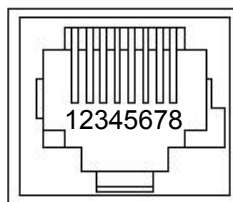| #	Pins
1)	DSR ⎤ For Last in line Daisy Chain
2)	DTR ⎦
3)	Unused
4)	Unused
5)	Unused
6)	Digital GND
7)	RXD (from TXD of control source)
8)	TXD (to RXD of control source)

12345678

Figure 9:
RS-232C Control on RJ-45