

CeilingVIEW 70 PTZ

Integrated, Recessed Installation Pan/Tilt/Zoom Ceiling Camera System

Figure 1: Vaddio CeilingVIEW 70 PTZ Camera System partially recessed into the ceiling



INTRODUCTION

Vaddio's CeilingVIEW 70 PTZ camera system is designed to provide system integrators with an easy to install, partially recessed, in-ceiling camera system (see Figure 1). The system features a Sony® EVI-D70 PTZ Camera mounted into a shallow recessed, metal ceiling camera enclosure with ceiling tile support and is equipped with Vaddio's EZCamera™ Cabling System which allows the integrator to use Cat. 5 cabling to run power, video and camera control.

IR Remote Control or RS-232 can control the camera pan/tilt/zoom and electronic functions. The VISCA control interface is included to allow the camera to work with any other VISCA compatible control device that supports the full range of motion that the camera supplies. The PowerRite™ power supply regulates the right amount of power needed for the camera over the Cat. 5 cabling.

INTENDED USE

Before operating the Vaddio CeilingVIEW 70 PTZ, please read the entire manual thoroughly. The camera system was designed, built and tested for use indoors in a suspended acoustic tile ceiling, 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 camera and/or create a potentially unsafe operating condition.

IMPORTANT SAFEGAURDS



Read and understand all instructions before using. Do not operate the camera if the camera 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 provided with the CeilingVIEW 70 PTZ camera system. Use of any unauthorized power supply will void any and all warranties.

UNPACKING

Carefully remove the device and all of the parts from the packaging. Unpack and identify the following parts:

- One (1) CeilingVIEW 70 PTZ Camera Module
- One (1) Sony RM-EV100 IR Remote Controller
- One (1) White trim ring with IR sensor attached
- One (1) Vaddio Quick-Connect Box
- One (1) Vaddio PowerRite 15VDC Power Supply
- One (1) AC power cable for Power Supply
- One (1) 12' (4.57m) S-Video cable
- Two (2) Adjustable ceiling tile support rails
- One (1) RJ-45 to DB9 EZCamera™ Control Adapter
- Mounting Hardware
- Installation and User Guide (010-2304-000 Rev. B)

INSTALLATION

The CeilingVIEW 70 PTZ is an integrated document/object camera specifically designed for installation in a suspended acoustic ceiling tile above a table or work surface or in a position to be used as an auxiliary PTZ camera. Recommended ceiling heights are between 8 and 12 feet.

Before Installing

- Be sure to check above the ceiling tile where you plan to install the camera to make sure the area is clear and that there is enough room for the CeilingVIEW Camera Module and all of its components.
- Keep in mind that other than viewing straight down, the CeilingVIEW PTZ has the capability of panning +/-170 degrees from center.
- The camera may be used with any 2' tile. The camera module enclosure and the tile support rails allow for flexibility and positioning freedom when used with 2'x2' and 2'x4' ceiling tiles.
- For cutting ease, remove the marked ceiling tile and place on a suitable and safe work surface

Note: If camera is to be controlled as part of a multi camera system, please refer to the section **CHANGING CAMERA DEFAULT SETTINGS** located on Page 6 of this manual.

**Step by Step
Mounting
Instructions**

To mount the CeilingVIEW 70 PTZ:

- 1) Attach a string or plumb bob to the ceiling tile with a thumbtack.
- 2) Position the string directly over ample table space or work surface to allow easy document and object positioning.
- 3) Using a sharp utility knife, score a 6-3/4" diameter circle into the front of the tile centered on the string.
- 4) Carefully cut out the 6-3/4" hole.
- 5) Place the tile support rail on the backside of the tile and center over the hole. Carefully place camera in cutout hole from the back of tile (see Figures 3 and 4) and attach to support rails.

Figure 3:
Side View of
CeilingVIEW 70 PTZ
Camera and back box
For installation
reference, the cutout
area by the IR detector
cable hole cable hole is
to the front of the
camera.

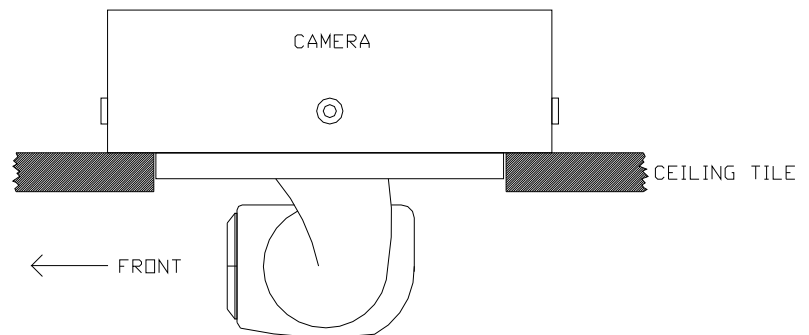
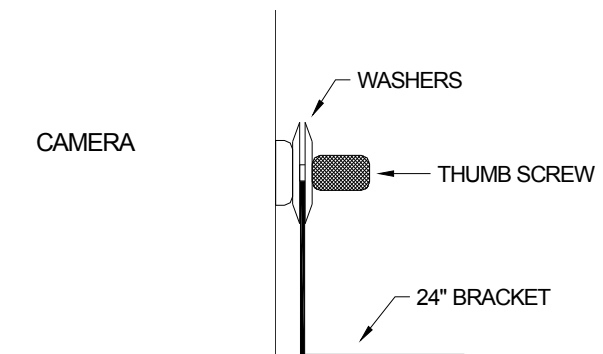


Figure 4:
Side View and Close-up
of Camera module and
support rail attachment.



- 6) Using the supplied thumbscrews and washers, attach the support rails to the CeilingVIEW 70 PTZ camera (see Figure 4). Place rail edge between two washers and tighten thumbscrew securely. **Note:** *The thumbscrew sits on top of the rail, not through the holes on the rail.*

Cabling the Camera

7) The Cat.5 plenum rated cable (not included) is run from the ceiling location where the camera is to be mounted, to where the Quick-Connect Box is located (see Figure 5). Both the S-Video and Composite Video outputs are active.

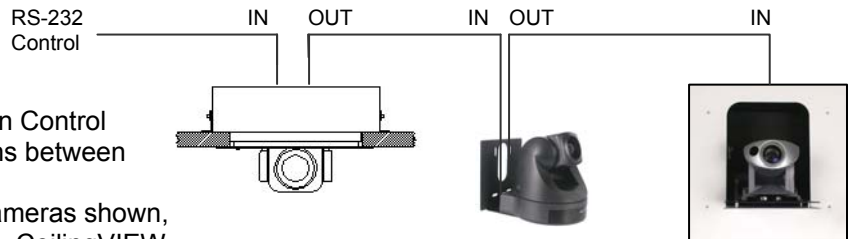
Figure 5:
Quick-Connect Box and connections



8) If needed, Cat.5 plenum rated cable(s) may be purchased from Vaddio to connect your camera to a serial control daisy-chaining between multiple cameras (see Figure 6).

Figure 6:
Daisy Chain Control Connections between cameras

(Vaddio Cameras shown, left to right: CeilingVIEW 70 PTZ, WallVIEW 70 PTZ and WallVIEW 50i PTZ HideAway)



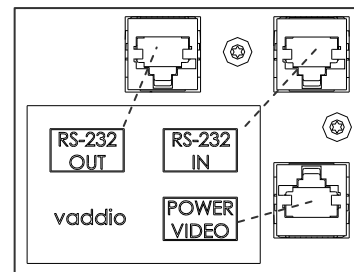
Connections

9) Connections (see Figure 7):

- a. Attach the installed Cat.5 cable routed from the POWER/VIDEO jack on the back of the camera to the Quick Connect Box.
- b. If a RS-232 control cable is to be used, it should be attached to the RS-232 IN jack (If a second or third camera is to be used, attach a cable to the RS-232 OUT jack and route to the next camera).

Figure 7:
RJ-45 Connections on back of Camera Module

- POWER/VIDEO
- RS-232 IN
- RS-232 OUT (for daisy-chain control)

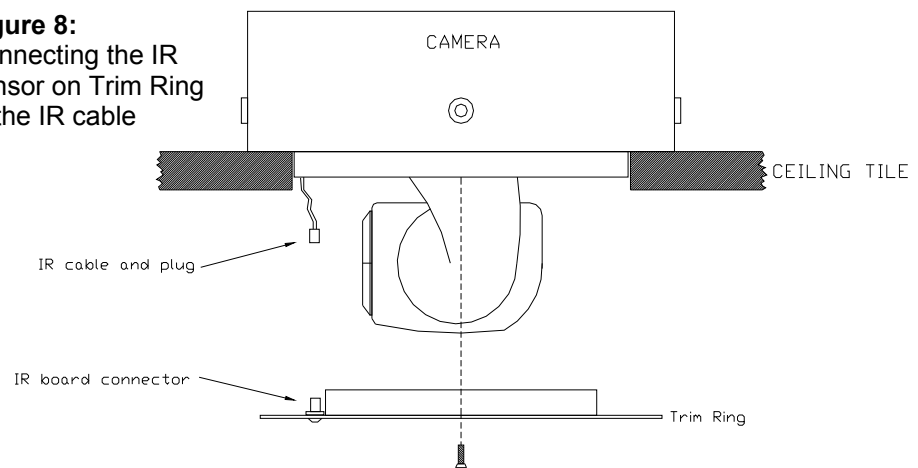


Finishing Up

10) The camera and ceiling tile should be carefully replaced in the suspended ceiling at this time.

11) Locate the white trim ring assembly and plug the IR cable into the IR board connector on the trim ring lip (see Figure 8). Take care not to pull any more than about 2 inches of cable from the camera enclosure. The connectors will fit together only one way with a positive click. (**Note: DO NOT hang the trim ring from the camera by the IR cable**) Carefully move trim ring into position on bottom of ceiling tile while feeding IR cable back into camera enclosure and secure with the two supplied white screws.

Figure 8:
Connecting the IR
sensor on Trim Ring
to the IR cable



Initial Camera Power Up

With the Cat.5 cable routed from the POWER/VIDEO jack on the back of the camera to the Quick Connect Box; connect the supplied Vaddio PowerRite power supply. The camera will activate and move to the "HOME" position and the S-Video and Composite Video signals will be live and viewable.

CONTROLLING THE CAMERA

The Camera can be controlled with the Sony RM-EV100 IR Remote Controller or through RS-232 using VISCA control protocols.

IR Remote

The Sony RM-EV100 IR Remote Controller controls the following functions when used with a CeilingVIEW 70 PTZ (see Figure 9). A fresh set of AA batteries (not included) should be installed in the provided Sony remote control. To operate, aim remote at camera and depress desired button.

Figure 9:
RM-EV100 IR Remote Controller

- Power on/off
- Camera Select: 1, 2, 3
- Focus: Auto, Manual (Near & Far)
- Zoom: Slow – Tele, Wide
Fast – Tele, Wide
- Data Screen On Screen Display
- Back Light: Back Light Compensation
- Pan-Tilt: Left, Right, Up, Down, Reset
- Home: Home/Centered Position
- Position: Preset, Reset
- Presets: 6 (1 through 6)
- L/R Direction Set: Std. Rev



Control Systems

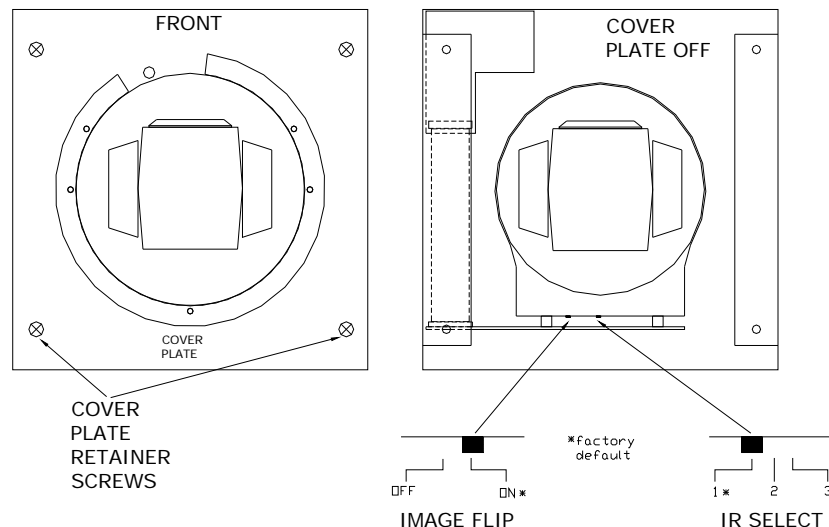
If you are using a control system (i.e. Crestron or AMX), plug the Cat.5 cable from the RS-232 IN jack on the camera to your control system using the Cat.5 to DB9 serial adapter supplied by Vaddio. If you are controlling more than one camera, plug the Cat.5 cable from the RS-232 OUT jack on the first camera to the RS-232 IN jack on the second camera. Repeat procedure if third camera is to be used.

CHANGING CAMERA DEFAULT SETTINGS

Please refer to Figure 10 for this procedure.

- Camera must be disconnected from electrical power.
- Remove the 4 cover plate retainer screws.
- Carefully lift off cover plate while threading the IR cable back through hole.
- Looking between the rear of the EVI-D70 camera body and the interconnect circuit board; locate the 2 switches (it may be necessary to slightly tilt the camera assembly to get the best view of the switches).
- The default setting for the image flip function is ON.
- The default setting for IR select is 1. If this to be camera number 2 in a 2 camera system, set this switch to position 2. If this camera is number 3 in a 3 camera system, set switch to position 3.
- Carefully thread the IR cable back through the cover plate and secure plate to camera enclosure using the 4 retaining screws.

Figure 10: Cover Plate Removal and default settings access





**RS-232
COMMAND LIST**

Vaddio supplies this control specification for the CeilingVIEW 70 PTZ camera. This VISCA control set (as used in Sony EVI cameras) is used in conjunction with additional Vaddio control commands (see comment section on Table 1) for added functionality of the camera lift.

**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...

**Control
Disclaimer**

The control codes for the CeilingVIEW 70 PTZ are the same codes used with the EVI-D70 pan/tilt/zoom camera. Vaddio is not translating these codes and does not add any translation or memory capability to enable use of the EVI-D70 camera as a main or auxiliary camera with videoconferencing system codecs or the associated IR remote controllers of the codecs.

For best control results, use the provided RM-EV100 IR Remote Controller or the VISCA Commands (detailed in Table 1 below) with an external control system.

Command List

Table 1: VISCA Command List (Partial)

RS-232 Command Set	Command	Command Packet*	Comments
AddressSet	Broadcast	88 30 01 FF	Address setting
IF_Clear	Broadcast	88 01 00 01 FF	I/F Clear
CommandCancel		8x 2p FF	p: Socket No.(=1or2)
CAM_Power	On	8x 01 04 00 02 FF	Power ON
	Off (Standby)	8x 01 04 00 03 FF	Power OFF
CAM_Zoom	Stop	8x 01 04 07 00 FF	
	Tele(Standard)	8x 01 04 07 02 FF	No
	Wide(Standard)	8x 01 04 07 03 FF	
	Tele(Variable)	8x 01 04 07 2p FF	p=0 (Low) ~7 (Fast)
	Wide(Variable)	8x 01 04 07 3p FF	
	Direct	8x 01 04 47 0p 0q 0r 0s FF	pqrs: Zoom Position
CAM_Dzoom	D-Zoom On	8x 01 04 06 02 FF	Digital Zoom ON/OFF
	D-Zoom Off	8x 01 04 06 03 FF	
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) ~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	



**Command List
(Continued)**

	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
AF Sensitivity	Normal	8x 01 04 58 02 FF	AF Sensitivity Norm/Low
	Low	8x 01 04 58 03 FF	
CAM_ZoomFocus	Direct	8x 01 04 47 0p 0q 0r 0s 0t 0u 0v 0w FF	pqrs: Zoom Position 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
	ATW	8x 01 04 35 04 FF	Auto Tracing White 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	R Gain Manual setting
	Up	8x 01 04 03 02 FF	
	Down	8x 01 04 03 03 FF	
	Direct	8x 01 04 43 0p 0q 0r 0s FF	pqrs: R Gain
CAM_BGain	Reset	8x 01 04 04 00 FF	B Gain Manual setting
	Up	8x 01 04 04 02 FF	
	Down	8x 01 04 04 03 FF	
	Direct	8x 01 04 44 0p 0q 0r 0s FF	pqrs: B Gain
CAM_AE	Full Auto	8x 01 04 39 00 FF	Automatic exposure mode
	Manual	8x 01 04 39 03 FF	Manual control mode
	Shutter Priority	8x 01 04 39 0A FF	Shutter priority auto exposure mode
	Iris Priority	8x 01 04 39 0B FF	Iris priority auto exposure mode
	Bright	8x 01 04 39 0D FF	Bright mode (Manual)
CAM_SlowShutter	Auto	8x 01 04 5A 02 FF	AutoSlowShutter ON/OFF
	Manual	8x 01 04 5A 03 FF	
CAM_Shutter	Reset	8x 01 04 0A 00 FF	Shutter setting (1/4sec~1/10000sec)
	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	



**Command List
(Continued)**

	Down	8x 01 04 0C 03 FF	
	Direct	8x 01 04 4C 00 00 0p 0q FF	pqrs: 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	pqrs: Bright Position
CAM_ExpComp	On	8x 01 04 3E 02 FF	Exposure Compensation ON/OFF
	Off	8x 01 04 3E 03 FF	
	Reset	8x 01 04 0E 00 FF	Exposure Compensation amount 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	pqrs: ExpComp Position
CAM_BackLight	On	8x 01 04 33 02 FF	Back Light Compensation
	Off	8x 01 04 33 03 FF	
CAM_SpotAE	On	8x 01 04 59 02 FF	Setting for AE
	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 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 0p 0q 0r 0s FF	pqrs: Aperture Gain
CAM_LR_Reverse	On	8x 01 04 61 02 FF	Mirror Image ON/OFF
	Off	8x 01 04 61 03 FF	
CAM_Freeze	On	8x 01 04 62 02 FF	Freeze Picture 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_ICR	On	8x 01 04 01 02 FF	ICR Mode ON/OFF
	Off	8x 01 04 01 03 FF	
CAM_AutoICR	On	8x 01 04 51 02 FF	Auto ICR ON/OFF
	Off	8x 01 04 51 03 FF	
CAM_Memory	Reset	8x 01 04 3F 00 pp FF	p: Memory number (=0 to 5)
	Set	8x 01 04 3F 01 pp FF	
	Recall	8x 01 04 3F 02 pp 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_Display	On	8x 01 04 15 02 FF	Display On/Off



**Command List
(Continued)**

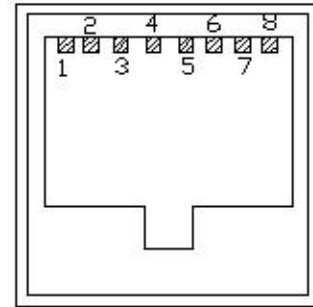
		(8x 01 06 06 02 FF)	
	Off	8x 01 04 15 03 FF	
		(8x 01 06 06 03 FF)	
	On/Off	8x 01 04 15 10 FF	
		(8x 01 06 06 10 FF)	
CAM_Title	Title Set1	8x 01 04 73 00 mm nn pp qq 00 00 00 00 00 00 FF	mm: V-Position, nn H-Position pp: Color, qq:Blink
	Title Set2	8x 01 04 73 01 mm nn pp qq rr ss tt uu vv ww FF	mnpqrstuvw: Set of characters (1 to 10)
	Title Set3	8x 01 04 73 02 mm nn pp qq rr ss tt uu vv ww FF	mnpqrstuvw: Set of characters (11 to 20)
	Title Clear	8x 01 04 74 00 FF	Title Set clear
	On	8x 01 04 74 02 FF	Title display On/Off
	Off	8x 01 04 74 03 FF	
CAM_IDWrite		8x 01 04 22 0p 0q 0r 0s FF	pqrs: Camera ID (=0000~FFFF)
CAM_Alarm	On	8x 01 04 6B 02 FF	Alarm On/Off
	Off	8x 01 04 6B 03 FF	
	SetMode	8x 01 04 6C pp FF	pp: Set the mode(00 -- 0C)
			00 Detect the Focus position (Not update the original data)
			01 Detect the Focus position (Update the original data)
			02 Detect the AE level (Not update the original data)
			03 Detect the AE level (Update the original data)
	SetDayNightLevel	8x 01 04 6D 0p 0p 0p 0q 0q 0q FF	Set the AE level of judgment of Day (ppp) and Night(qqq)
Alarm (Reply)	y0 07 04 6B 01 FF	Detect level "Low" to "High"	
	y0 07 04 6B 00 FF	Detect level "High" to "Low"	
Pan/Tilt Drive	Up	8x 01 06 01 VV WW 03 01 FF	VV: Pan Speed 01 to 18 WW: Tilt Speed 01 to 17 YYYY: Pan Position F725 to 08DB (center 0000) ZZZZ: Tilt Position FE70 to 04B0 (Image Flip: off) (center 0000) Tilt Position FB50 to 0190 (Image Flip: ON) (center 0000)
	Down	8x 01 06 01 VV WW 03 02 FF	
	Left	8x 01 06 01 VV WW 01 03 FF	
	Right	8x 01 06 01 VV WW 02 03 FF	
	Up-Left	8x 01 06 01 VV WW 01 01 FF	
	Up-Right	8x 01 06 01 VV WW 02 01 FF	
	Down-Left	8x 01 06 01 VV WW 01 02 FF	
	Down-Right	8x 01 06 01 VV WW 02 02 FF	
	Stop	8x 01 06 01 VV WW 03 03 FF	
	Absolute Position	8x 01 06 02 vv WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	
	Relative Position	8x 01 06 03 vv WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	
	Home	8x 01 06 04 FF	
	Reset	8x 01 06 05 ff	

**RS-232
Connection**

The RJ-45 Connector labeled RS-232 IN (see page 4) has the following pin-outs. The DSR and DTR are added to the Vaddio CeilingVIEW 70 PTZ and other Vaddio products to support the Sony Daisy-chain control standard (see Figure 11).

**Figure 11:
RS-232 IN pin-outs for RJ-45 connector on back of CeilingVIEW 70 PTZ**

- 1 DTR (Sony Daisy-chain to DSR)
- 2 DSR (Sony Daisy-chain to DTR)
- 3 Unused
- 4 Unused
- 5 Unused
- 6 DIGITAL GND
- 7 RXD (from TXD of control source)
- 8 TXD (to RXD of Control source)



**CARE AND
CLEANING**

Do not attempt to take the camera module apart (other than for the reasons stated in the manual). There are no user-serviceable components inside.

- Do not spill liquids onto the camera
- Keep this device away from food and liquid
- Avoid touching the lens
- For smears or smudges, clear any dust with a blower and wipe stains with a glass cleaner and clean, soft cloth.
- To clean exterior of camera, wipe with a clean soft cloth. Do not use any abrasive chemicals.

**OPERATING
CONDITIONS**

Do not operate the CeilingVIEW 70 PTZ under the following conditions for any circumstance:

- Temperatures above 104°F (40°C)
- Temperatures below 32°F (0°C)
- High humidity, condensing or wet environments
- Dusty environments
- In inclement weather
- Under severe vibration
 - Storage Temperatures: -4° F (-20° C) to +140° F (60° C)

TROUBLESHOOTING

Problem	Questions for Troubleshooting
No image	Is the Vaddio supplied power supply connected to a working AC wall outlet?
	Is Vaddio power supply securely connected to wall plate or Quick Connect box?
	Is the Category 5 signal cable securely connected to the Quick Connect box?
	Is the Category 5 signal cable connected to correct port on the camera?
Camera will not respond to IR Remote	Have fresh AA batteries been installed in the IR Remote control?
	Is remote being aimed directly at camera during use?
	Is the camera power on?
Camera will not respond to control system RS-232 control commands	Verify correct serial connection to control device.
	Is Category 5 RS-232 cable connected to the RS-232 IN jack on the camera?
	Verify correct VISCA commands as per the serial command list.
	If camera is used in a multi camera system, is the correct camera being addressed?
	Is the camera power on?

SPECIFICATIONS

Specification	CeilingVIEW 70 PTZ	
Part Number	999-2304-000 999-2304	-001
Signal system	NTSC	PAL
Image sensor	1/4-type EXview HAD CCD	
Effective Pixels	768 x 494 (H x V)	752 x 582 (H x V)
Horizontal Resolution	470 TV lines	460 TV lines
Lens	18X Optical Zoom, f=4.1 mm (wide) to 73.8 mm (tele), F1.4 to F3.0	
Total Zoom	18X Optical x 12X Digital = 216X Total Zoom	
Horizontal angle of view	2.7° (tele end) to 48° (wide end)	
Minimum illumination	1 Lux (F1.4)	
Auto exposure	Auto/Manual/Priority AE, Exposure compensation, Back-light compensation	
Shutter speed	1 to 1/10,000 s	
Gain	Auto/Manual (-3 to +28 dB, 2 dB steps)	
White balance	Auto/ATW/Indoor/Outdoor/One push/Manual	
S/N ratio	More than 50 dB	
Pan/tilt	Pan: ±170° (Max. speed: 100°/s), Tilt: -30° to +90° (Max. speed: 90°/s)	
Position preset	6 positions	
Picture effect	Neg. Art, Black & White	
Video outputs	Composite Video and S-Video (concurrent)	
Power requirement	10.8 VDC to 13.2 VDC	
Power consumption	11w	
Power Supply	15 VDC, 3.3A (PowerRite Power Supply Spec), 100V– 240V Switcher	
Operating Temperature	32 to 104° F (0 to 40° C)	
Storage Temperature	-4 to +140° F (-20 to +60° C)	
Dimensions	Back Box: 2.5" (6.35cm) Tall x 8.75" (22.23cm) W x 8.75" (22.23cm) D Camera: 5-3/4" (14.6cm) Tall x 5-3/16" (13.2cm) W x 6" (15.7cm) D	
Weight	Approx. 6.1 lbs / 2.77 kg	



FCC Part 15 Compliance and EC Declaration of Conformity

Sony Corporation holds the FCC and CE certifications for the EVI-D70 and EVI-D70P cameras used internal to the CeilingVIEW 70 PTZ mechanical enclosure. Please contact Sony Corporation for this documentation.

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 if Vaddio receives notice of such defects during the warranty. They will, at its 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, customers applied software or interfacing, unauthorized modifications or misuse, operation outside the normal environmental specifications for the product, use of the incorrect power supply, 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. 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 Authorization (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. Describe the reason for repairs or returns as well as the date of purchase. Include your assigned RMA number in all correspondence with Vaddio. Write your assigned RMA number on the outside of the box when returning the product.

Voided warranty – 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.

Shipping and 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 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.

