VADDIO™ AUTO TRAK™
Automated Content Presentation System
Featuring Automatic Pan/Tilt/Zoom Camera Tracking

Part Numbers (North America Only):
999-7200-000: Tracking Camera with HD YPbPr Output and Audio Interface
999-7205-000: Tracking Camera with HD YPbPr Output w/o Audio Interface
999-7210-000: Tracking Camera with HD DVI-D and YPbPr Output and Audio Interface
999-7215-000: Tracking Camera with HD DVI-D and YPbPr Output w/o Audio Interface
AutoTrak Overview
The AutoTrak System is an IR tracking system that consists of an IR lanyard with an integrated wireless microphone attached to a belt pack that is worn by a presenter or instructor. Within the lanyard’s cloth cover, there are fifteen (15) 850nm wavelength IR LEDs on a flat flex circuit that emit IR light that is tracked by an HD-18 PTZ IR Reference Camera with special IR filters. The IR position is relayed to the AutoTrak CPU which in turn controls the HD-18 PTZ Tracking Camera and follows the presenter and keeps the presenter framed in the camera shot throughout the presentation environment. The Tracking Camera is based on the Vaddio high definition, HD-18 with 1/3-type, 1.3 mega pixel CCD image sensor which operates well in low light and reproduces color accurately with vibrant detail and clarity. The AutoTrak system is also available without the audio system.

The HD-18 cameras use the Vaddio Cat-5e cabling systems for ease of set up and installation. The system can be permanently installed or configured as a cart system for portability and ease of positioning in the largest of lecture halls. Each system includes a dual HD-18 camera mount which can be wall mounted or mounted on top of the Vaddio Edge series video carts.

The optimum operating range or the system (from the IR Lanyard to the IR Reference camera) is between 12’ (3.65m) and up to 40’ (12.2m). System positioning is critical for proper and consistent operation.

The AutoTrak can be installed as a standalone system or can be used in conjunction with myriad Vaddio Presenter controlled solutions including AutoPresenter™, PresenterPOD™, ControlVIEW XHD™, TouchVIEW™, AutoVIEW™ IR, StepVIEW™ Mats, MicVIEW™ and the Vaddio Video Whiteboard. As an added benefit, once the AutoTrak system is configured the Mouse, Keyboard and Monitor I/O devices can be removed from the system to ensure the system isn’t subject to unauthorized modification.

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

Important Safeguards:
Read and understand all instructions before using. Do not operate any device 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 provided with the system. Use of any unauthorized power supply will void any and all warranties.

Please do not use “pass-thru” type RJ-45 connectors. These pass-thru type connectors do not work well for professional installations and can be the cause of intermittent connections which can result in the RS-232 control line failing and locking up, and/or compromising the HSDS™ signals. For best results please use standard RJ-45 connectors and test all cables for proper pin-outs prior to use and connection to Vaddio product.

Save These Instructions:
The information contained in this manual will help you install and operate your product. If these instructions are misplaced, Vaddio keeps copies of Specifications, Installation and User Guides and most pertinent product drawings for the Vaddio product line on the Vaddio website. These documents can be downloaded from www.vaddio.com free of charge.
UNPACKING:
Carefully remove all of the parts for the AutoTrak 999-7200-000 (North America Only) packaging:
- One (1) AutoTrak CPU (closed system preloaded with AutoTrak software and video card)
- One (1) AC Cord Set for AutoTrak CPU
- One (1) PS/2 Keyboard
- One (1) PS/2 Mouse
- One (1) IR and Audio Lanyard with attached 32'' cable with 5-pin mini XLR connector
- One (1) Belt Pack Unit "BPU" with 2'' RP-SMA straight antenna and attached belt clip (4-AA batteries not included)
- One (1) AutoTrak Audio Interface
- One (1) Vaddio PowerRite 12 VDC, 1A Switching Power Supply
- One (1) AC Cord Set - North America

AutoTrak Cameras
- One (1) *HD-18 PTZ Camera with AutoTrak Software preloaded - Tracking Camera
  - One (1) Quick-Connect SR Interface (998-1105-016) for Tracking Camera
  - One (1) 24VDC, 2A, 100-240V, 50/60Hz 110-240V Switching Power Supply
- One (1) *HD-18 PTZ Camera with AutoTrak Software preloaded – IR Reference Camera
  - One (1) 37mm female lens ring adapter for HD-18 attached to HD-18 Camera
  - One (1) 37mm to 58mm adapter ring
  - One (1) 58mm polarizing filter
  - One (1) 58mm band-pass IR filter
  - One (1) AutoTrak Quick-Connect Box (998-1105-020)
  - One (1) Standard Quick-Connect Box (998-1105-001)
  - One (1) 24VDC, 2A, 50/60Hz 110-240V Switching Power Supply (451-2000-0024)
  - One (1) 18''/45.8cm Video Cable (BNC to RCA)
  - One (1) 12''/30.48cm Cat 5e Patch Cable
- One (1) 998-2100-000 - Vaddio IR Remote & Manual (2-AAA batteries not included)
- One (1) **535-2000-233 Stacked Gusseted Mount for two (2) HD-18 and Mounting Hardware
- Three (3) 998-1001-232 Control Adapters
- One (1) 998-7200-232 Control Adapter for use with the AutoPresenter - (Only needed when used with the AutoPresenter for Tracking Camera PTZ Presets)
- Documentation and Manuals (Document Number (342-0030)

For the 999-7205-000 System - Start with the 999-7200-000 System with Audio Interface
Remove: One (1) Belt Pack Unit "BPU" with 2'' RP-SMA straight antenna and attached belt clip (4-AA batteries not included), One (1) AutoTrak Audio Interface, One (1) Vaddio PowerRite 12 VDC, 1A Switching Power Supply
Add: One (1) AutoTrak Worldwide Belt Pack Unit "BPU" and attached belt clip (4-AA batteries not included)

For the 999-7210-000 System - Start with the 999-7200-000 System with Audio Interface
Remove: One (1) 998-1105-016 HD-18 Quick-Connect SR Interface for Tracking Camera (YPbPr HD Output)
Add: One (1) 998-1105-018 Quick-Connect DVI/ HDMI SR Interface for Tracking Camera (DVI-D and YPbPr HD Outputs)

For the 999-7215-000 System - Start with the 999-7205-000 System w/o Audio Interface
Remove: One (1) 998-1105-016 HD-18 Quick-Connect SR Interface for Tracking Camera (YPbPr HD Output)
Add: One (1) 998-1105-018 Quick-Connect DVI/ HDMI SR Interface for Tracking Camera (DVI-D and YPbPr HD Outputs)

*Note 1: The Vaddio HD-18 cameras are preloaded with AutoTrak control protocols which differ from the "VISCA" type control normally used in the stock HD-18 PTZ Camera. The HD-18 cameras will work with the Vaddio IR Remote but is recommended that the PTZ positions of the camera be set with the AutoTrak Software. The HD-18 AutoTrak cameras will not work with any other controller besides AutoTrak at this time.

**Note 2: The stacked camera arrangement is required for the AutoTrak software to track properly

The AutoTrak Components:
AutoTrak CPU
Note: The AutoTrak CPU may be subject to change in cosmetics due to the turbulent nature of the PC industry, parts availability and model year upgrades. If changes are made, Vaddio will be certain to make changes in the documentation accordingly. The AutoTrak CPU is a 1-RU rack mount computer that will come preloaded with the AutoTrak software. The exact specifications are subject to change and any changes that will be made will be in the spirit of product improvement only. The AutoTrak CPU uses an Intel® Atom™ Dual Core Processor, Intel Graphics Media Accelerator, 1GB DDR2 Memory, four (4) RS-232 Ports, six (6) USB 2.0 ports, two (2) PS/2 interfaces for keyboard/mouse, 16GB Compact Flash and Video capture card.

An important feature is after the AutoTrak CPU and software is configured using the mouse, keyboard and Monitor, these I/O devices can be removed to prevent any unauthorized access to the system. To reattach the mouse and keyboard, the system will need to be rebooted to recognize these devices.
• **Front Panel Controls of AutoTrak Worldwide CPU:**

1) **Power Indicator:** Illuminates when power is on  
2) **Hard Drive Activity Indicator:** Indicates when solid state drive is active  
3) **Recessed Reset Switch:** Resets the system without removing power to the CPU  
4) **USB Ports:** Two Front Panel USB Ports

• **Rear Panel of AutoTrak Worldwide CPU:**

1) **Power Receptacle:** IEC60320 C14 for power cable  
2) **Power Switch:** Turns ON/OFF AutoTrak CPU  
3) **COM PORT 1:** RS-232 Port for HD-18 IR Reference Camera  
4) **COM PORT 2:** RS-232 Port for HD-18 Tracking Camera  
5) **COM PORT 3:** Use RS-232 Port 3 when AutoTrak is used with the AutoPresenter  
6) **RGBHV (on DE-15) Output:** To setup and view software menus (800 x 600 @ 60Hz)  
7) **Ethernet Ports:** Not used with AutoTrak Application  
8) **USB Ports:** Four USB Ports on the back panel for use with Keyboard, Mouse and USB Flash Drive  
9) **Audio I/O:** Not used with AutoTrak Application  
10) **Video Input Port:** Plug the HD-18 IR Reference Camera into the center yellow composite video connector

• **The IR Lanyard and Belt Pack for use with the Audio Interface:**

**AutoTrak Systems 999-7200-000 and 999-7210-000**

1) **IR Lanyard:** Cloth covered flat flex circuit with IR LEDs terminates at the Central Medallion (Note: Please do not fold the Lanyard necklace for any reason).  
2) **Central Medallion:** Supplies a connection point for the flat flex cable, has an integrated wireless microphone and a rubber over-molded cable strain relief that attaches the 32” cable.  
3) **32” (813mm) Cable:** Terminates the Central Medallion to the Belt Pack with a 5-Pin Mini XLR-F connector.  
4) **Belt Pack Front Panel Controls:** The System on/off controls and LED indicator as well as the Microphone on/off controls are located on the Belt Pack Control Panel (see page 6).  
5) **Antenna:** 2” (50.8mm) RP-SMA straight antenna to transmit RF wireless audio (903.37 to 921.37MHz) from the integrated microphone element  
6) **Belt Pack:** Holds power circuitry, wireless microphone transmitter, transmitter frequency control switches (see page 6) and batteries.  
7) **Belt Clip:** To clip the Belt Pack on a belt like device that the presenter wears.
Belt Pack Front Panel for use with Audio Interface:

Belt Pack Control Panel:
1) **Lanyard Cable Connector (5-pin mini XLR - M):** Plug the cable attached to the Lanyard into the mini XLR connector to allow audio to be received by the Belt Pack and for power to be provided to the IR LEDs in the Lanyard.

2) **System Power:** To use the Belt Pack or IR Lanyard, turn the SYSTEM POWER switch to the on position and the blue LED will illuminate. Be sure to turn off the SYSTEM POWER switch when the system is not in use to save the battery life.

3) **Microphone ON/OFF**
This switch turns the wireless microphone on or off at the belt pack allowing the Presenter to use a hand-held or podium microphone instead of the built-in microphone, or for momentary microphone muting. The System Status light on the Audio Interface will light if a microphone signal is detected. If the Microphone is turned off at the Belt Pack, the System Status light will not light.

4) **Antenna**
Use the 2” straight antenna with the RP-SMA connector to transmit the wireless microphone audio back to the AutoTrak Audio Interface.

5) **Battery Compartment**
Inside the battery compartment, four (4) AA batteries are housed and under normal use, the battery life should last up to six (6) hours. Please pay careful attention to the polarity markers on the battery holder when installing the batteries.

**Changing Belt Pack Transmission Frequencies**
A 6-position dip switch for transmit frequency selection is also inside the battery compartment. Set the first three (1, 2 & 3) dip switches in the Belt Pack for a transmit frequency that matches the receive frequency dip switches at the AutoTrak Audio Interface. If you receive interference on one set of frequencies, change both the Belt Pack and Audio Interface to a different frequency.

The switch selection and frequencies* are as follows:

<table>
<thead>
<tr>
<th>CHANNEL</th>
<th>SW1</th>
<th>SW2</th>
<th>SW3</th>
<th>FREQUENCY (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>903.37</td>
</tr>
<tr>
<td>2</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>906.37</td>
</tr>
<tr>
<td>3</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>907.87</td>
</tr>
<tr>
<td>4</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>909.37</td>
</tr>
<tr>
<td>5</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
<td>912.37</td>
</tr>
<tr>
<td>6</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>915.37</td>
</tr>
<tr>
<td>7</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>919.87</td>
</tr>
<tr>
<td>8</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>921.37</td>
</tr>
</tbody>
</table>

*(Note: Switch UP in the Belt Pack is ON).*

*Please match the transmit frequencies on the Belt Pack to the receive frequencies of the AutoTrak Audio Interface.*
AutoTrak Audio Interface for AutoTrak Systems 999-7200-000 and 999-7210-000:
Front Panel Controls

1) Power ON/OFF: This switch turns the power for the AutoTrak Audio Interface on or off. To use, push the power button until the blue LED is lit and the system is ready for operation.

2) Mic Mute: Touching this button will light the blue LED and will mute the microphone output at the interface. To un-mute, touch the button again and the LED will turn off and the audio path will be restored.

3) Audio Level: This control is an audio taper 10K potentiometer and controls the audio level at the output of the AutoTrak Audio Interface. Audio input levels are preset from the factory.

4) System Status: This status indicator will light if the microphone signal is being received.

AutoTrak Audio Interface:
Rear Panel Connections

1) 12 VDC, 1.0 Amp Power Connector: The 5.5mm OD and 2.5mm ID power connector should be plugged into the PowerRite power supply provided by Vaddio. Use of any unauthorized power supplies will void any and all warranties.

2) Audio Outputs: There are two (2) audio outputs available on the rear panel. The characteristics are as follows:
   • Balanced Line Level (on XLR - M connector) +4dBu
   • Unbalanced Line Level (on RCA-F connector) -10dBV

3) Antenna (for wireless audio): Connect the provided 6.5” antenna to the RP-SMA connector for reception of the wireless audio signal. An extender may be needed if the Audio Interface is buried in 44-RU metal rack and surrounded by other metal chassis components.

4) Mic Settings: The wireless microphone receive frequencies can be set from the three (3) dip switches. The switch selection and frequencies* are as follows:

<table>
<thead>
<tr>
<th>Channel</th>
<th>SW1</th>
<th>SW2</th>
<th>SW3</th>
<th>FREQUENCY (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>903.37</td>
</tr>
<tr>
<td>2</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>906.37</td>
</tr>
<tr>
<td>3</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>907.87</td>
</tr>
<tr>
<td>4</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>909.37</td>
</tr>
<tr>
<td>5</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
<td>912.37</td>
</tr>
<tr>
<td>6</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>915.37</td>
</tr>
<tr>
<td>7</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>919.87</td>
</tr>
<tr>
<td>8</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
<td>921.37</td>
</tr>
</tbody>
</table>

*For proper audio operation, match the transmit frequencies on the Belt Pack to the receive frequencies of the AutoTrak Audio Interface. (Note: Switch Down on the Audio Interface is ON).
The IR Lanyard and Worldwide Belt Pack for the Systems without Audio Interface:
AutoTrak Systems 999-7205-000 and 999-7215-000:

8) **IR Lanyard**: Cloth covered flat flex circuit with IR LEDs terminates at the Central Medallion (Note: Please do not fold the Lanyard necklace for any reason). Face the lettering on the lanyard cloth towards the cameras.

9) **Central Medallion**: Supplies a connection point for the flat flex cable and a rubber over-molded cable strain relief that attaches the 32” cable.

10) **32” (813mm) Cable**: Terminates the Central Medallion to the Belt Pack with a 5-Pin Mini XLR-F connector.

11) **Belt Pack Front Panel Controls**: The System on/off controls and LED indicator and Status Indicator controls are located on the Belt Pack Control Panel (see page 6).

12) **Belt Pack**: Holds power circuitry (see page 6) and batteries.

13) **Belt Clip**: To clip the Belt Pack on a belt like device that the presenter wears.

AutoTrak Worldwide Belt Pack Control Panel for use without Audio Interface (no transmitter or antenna):

1) **Lanyard Cable Connector (5-pin mini XLR - M)**: Plug the cable attached to the Lanyard into the mini XLR connector for power to be provided to the IR LEDs in the Lanyard.

2) **System Power**: To use the Belt Pack or IR Lanyard, turn the SYSTEM POWER switch to the ON position and the blue LED will illuminate. This LED will blink when the battery life is low and the batteries need to be changed. Please change the batteries within ½ hour after the LED starts blinking for best results.

**NOTE**: Turn off the SYSTEM POWER switch when the system is not in use to save the battery life.

3) **Status LED**

The Status LED will blink if there is a problem with the Lanyard's flat-flex circuit or the Lanyard is not plugged into the 5-pin mini XLR jack. This LED should remain off. Please contact Vaddio Tech Support if the Status LED blinks consistently with the Lanyard plugged in.

4) **Battery Compartment**

Inside the battery compartment, four (4) AA batteries are housed and under normal use, the battery life should last up to six (6) hours. Please pay careful attention to the polarity markers on the battery holder when installing the batteries.
Lanyard, Belt Pack Controls:
The central medallion of the lanyard has an attached, strain-relieved, 32" cable that terminates to a 5-pin mini XLR female connector. Attach the 5-pin mini XLR to the 5-pin mini XLR male connector on the belt pack. The microphone element is on the top of the central medallion. The lanyard material houses a flat flex type circuit where the IR LEDs are mounted. After the initial setup is complete, the presenter should slip the lanyard over their head and position the medallion away from the presenter and face the Vaddio logos on the lanyard cloth cover out, toward the cameras. Clip the belt pack onto the clothing, belt or waistband securely. Please avoid dropping the belt pack.

Power to illuminate the IR LEDs is supplied from the Belt Pack and if the System Power Switch is ON, the IR LEDs will illuminate at 850 nanometers (out of the range of visible light for humans). Each Lanyard has 15 IR LEDs spread out evenly through out the Lanyard Necklace. This invisible light is picked up by the IR reference camera of the AutoTrak system and information is sent to the Tracking camera in order to follow the presenter throughout the presentation environment.

Installation and Operating Instructions
For AutoTrak with Audio Interface with Belt Pack Unit and Lanyard
(Systems with Audio 999-7200-000 and 999-7210-000)
1) Connect the 12 VDC, 1.0 Amp power supply to the Audio Interface.
2) Connect the 6.5” RP-SMA Antenna to the back of the Audio Interface.
3) Connect the Audio outputs to a mixer/amp.
4) Select a frequency to transmit and receive audio from the Belt Pack Unit on the back of the Audio Interface.
5) Touch the Power button on the Audio Interface and the blue LED inside the power switch will illuminate
6) Turn the Audio Level on the front panel to “1”.
7) Connect the Lanyard to the Belt Pack
8) Move the System Power and the Microphone switches on the Belt Pack to the “OFF” position
9) Remove the battery door on the Belt Pack:
   a. Set the 3-position dip switch to the same frequency (position) as the Audio Interface
   b. Carefully matching the polarity markings; install four (4) AA batteries (not included)
   c. Return the battery door cover
10) Move the System Power and the Microphone power switch on the Belt Pack to the “ON” position.
11) The System Status LED on the Audio Interface should illuminate.
12) Make sure that the Mic Mute LED on the front panel is not lit.
13) Adjust the mic volume by moving the Audio Level potentiometer until the desired output level is reached.
14) Test the mic ON/OFF switch on the Belt Pack and also the Mic Mute switch on the Audio Interface for proper operation.

Notes:
- The IR LEDs can not be seen (if you are human - since the 850nm LED light is outside of human optical sensory range) so make sure that the System Power on the Belt Pack Unit is off when it is not in use.
- If the Audio Level output is set to a high level, please avoid touching the mic element on the central medallion.
- If the System Power LED on the Belt Pack flashes, then the battery is low and a battery change is required.
- If Microphone LED on the Belt Pack flashes, then a fault condition is present (i.e. bad IR LED in the lanyard necklace or a bad fold in the lanyard necklace etc…). Cycle the power, check the lanyard to Belt Pack cable connection and check the batteries. If checking these conditions and recycling power does not clear the problem, then call Vaddio Technical Support Team.
- Inside the Belt Pack there is a 6-position Dip switch. The first 3 positions are used to set the transmit frequency, switches 4 and 5 are unused/future and switch 6 can be used to turn off the IR LEDs in case the Presenter wants to use the Lanyard, Belt Pack and Audio Interface as a wireless mic only. If switch 6 is activated, the system will not track the lanyard.

Warnings:

Do not fold the Lanyard Necklace at any time as it contains a flexible circuit that may cease to work if the necklace is hard folded. Folding the Lanyard Flex Circuit will void any and all warranties.
Basic System Configuration 1:
Base System using HD-18 Quick-Connect SR Interface
With Audio Interface 999-7200-000

AutoTrak Lanyard, attached cable, Belt Pack and 2-inch
RP-SMA Antenna

HD-18 Quick-Connect SR Interface 998-1105-016

Belt Pack Transmitting Wireless Mic Audio at
912.37 MHz to AutoTrak Audio Interface

HD-18 Tracking Camera

AutoTrak Quick-Connect Box 998-1105-020

AutoTrak CPU

Serial to Cat-5e Control Adapters
Use Adapter P/N: 998-1001-232 on
these Ports

Audio System
(Not Included)

No sharks or catfish were harmed in the
making of this simulated video feed.

©2011 Vaddio - All Rights Reserved. AutoTrak - Document Number 342-0030 Rev. D  Page 10 of 45
Basic System Configuration 2:
System using Quick-Connect DVI/HDMI - SR Interface* With Audio Interface 999-7210-000

AutoTrak Lanyard, attached cable, Belt Pack and 2-inch RP-SMA Antenna

Belt Pack Transmitting Wireless Mic Audio at 912.37 MHz to AutoTrak Audio Interface

* Quick-Connect DVI/HDMI - SR Interface 998-1105-018

HD-18
IR Reference Camera with Adapters and Filters

Composite Video feed to AutoTrak CPU

AutoTrak Quick-Connect Box 998-1105-020

Cat. 5e Power to EZ Port

CVBS BNC to RCA

Cat. 5e

AutoTrak Dual HD-18 Mount

Cat. 5e

AutoTrak CPU

Keyboard & Mouse

Built-in 2 x 2 Speakers

Sound System (Not Included)

HD Video Monitors (Not Included)

Simulated Video Feeds

T C60 Codec (Not Included)

RGBHV Monitor (Not Included)

Serial to Cat-5e Control Adapters Use Adapter P/N: 998-1001-232 on these Ports

Cat. 5e

CVBS in Video 2

Std Quick-Connect Box 998-1105-001

PWR Supply

6.5” RP-SMA Antenna

Cat. 5e

HD Video

AutoTrak Wireless Audio Interface Receiving Audio from Belt Pack at 912.37 MHz

Balanced Line Level (on XLR +4dBu) or Unbalanced Line Level (on RCA -10dBV)
Basic System Configuration 3:
AutoTrak System using HD-18 Quick-Connect SR Interface
Without Audio Interface and Audio Lanyard/Belt Pack

999-7205-000

AutoTrak Lanyard with attached cable and Worldwide Belt Pack
(No transmitter and antenna)

HD-18 Quick-Connect SR Interface 998-1105-016

Cat-5e Power to Camera

YPbPr from Camera

CVBS

BNC to RCA

Cat-5e

Power to
EZ
Port

Power to Camera

CVBS

RS-232

Cat-5e

HD-18 Tracking Camera

IR Reference Camera with Adapters and Filters

AutoTrak Quick-Connect Box 998-1105-020

Cat-5e

AutoTrak Dual HD-18 Mount

Cat-5e

AutoTrak Lanyard with attached cable and Worldwide Belt Pack
(No transmitter and antenna)

Cat-5e

AutoTrak Quick-Connect Box 998-1105-016

Cat-5e

HD-18 IR Reference Camera with Adapters and Filters

Composite Video feed to AutoTrak CPU

Serial to Cat-5e Control Adapters - Use Adapter P/N: 998-1001-232 on these Ports

Port 2

HDX Codec

AutoTrak CPU

PWR Supply

HD Video Monitors (Not Included)

Simulated Video Feeds

HDMI (1080p/60)

Serial to Cat-5e Control Adapters - Use Adapter P/N: 998-1001-232 on these Ports

RGBHV Monitor (Not Included)

RGBHV

Std Quick-Connect Box 998-1105-001

HDX Codec

RS-232

Cat-5e

Cat-5e

Port 2

Port 1

CVBS in Video 2

RGBHV Monitor (Not Included)

RGBHV

HDX Codec

Serial to Cat-5e Control Adapters - Use Adapter P/N: 998-1001-232 on these Ports

HDX Codec

Serial to Cat-5e Control Adapters - Use Adapter P/N: 998-1001-232 on these Ports

HDX Codec

AutoTrak CPU

Keyboard & Mouse
Basic Configuration 4:
AutoTrak Int’l System using Quick-Connect DVI/HDMI - SR Interface
Without Audio Interface and Audio Lanyard/Belt Pack
999-7215-00

AutoTrak Lanyard with attached cable and Worldwide Belt Pack
(No transmitter and antenna)

* Quick-Connect DVI/HDMI - SR Interface 998-1105-018

Power to Camera
YPbPr (1080p/60) from Camera

AutoTrak Quick-Connect Box 998-1105-020

Cat-5e Power to EZ Port

CVBS
BNC to RCA

Cat-5e

AutoTrak Lanyard with attached cable and Worldwide Belt Pack
(No transmitter and antenna)

Std Quick-Connect Box 998-1105-001

Cat-5e

HD Video Monitors (Not Included)
Simulated Video Feeds

RGBHV Monitor (Not Included)

Cessna 172
(Not included)

Serial to Cat-5e Control Adapters - Use Adapter P/N: 998-1001-232 on these Ports

Cat-5e

AutoTrak CPU

Keyboard & Mouse

T C60 Codec (Not Included)

RS-232 Cat-5e

IR Reference Camera with Adapters and Filters

Composite Video feed to AutoTrak CPU

AutoTrak Dual HD-18 Mount

AutoTrak CPU

AutoTrak Quick-Connect Box 998-1105-020

Power to Camera

CVBS

Cat-5e

AutoTrak CPU

Port 2 Port 1

RS-232 Cat-5e

Cat-5e

HD-18 Tracking Camera

AutoTrak CPU

Port 2 Port 1

RS-232 Cat-5e

Cat-5e

HD-18 IR Reference Camera with Adapters and Filters

Composite Video feed to AutoTrak CPU

Cat-5e

AutoTrak Quick-Connect Box 998-1105-020

Power to Camera

CVBS

BNC to RCA

Cat-5e

AutoTrak Lanyard with attached cable and Worldwide Belt Pack
(No transmitter and antenna)

Std Quick-Connect Box 998-1105-001

Cat-5e

HD Video Monitors (Not Included)
Simulated Video Feeds

RGBHV Monitor (Not Included)

Cessna 172
(Not included)

Serial to Cat-5e Control Adapters - Use Adapter P/N: 998-1001-232 on these Ports

Cat-5e

AutoTrak CPU

Keyboard & Mouse

T C60 Codec (Not Included)

RS-232 Cat-5e

IR Reference Camera with Adapters and Filters

Composite Video feed to AutoTrak CPU

Cat-5e
The AutoTrak CPU, Camera and Software Operating Instructions

The AutoTrak CPU is a 1-RU rack mount computer that comes preloaded with the AutoTrak software. It is a closed system based on a Linux operating system. The AutoTrak CPU uses an Intel® Atom™ Dual Core Processor, Intel Graphics Media Accelerator, 1GB DDR2 Memory with six (6) USB ports, four (4) RS-232 Ports, two (2) PS/2 interfaces for keyboard/mouse, 16GB Compact Flash and Video capture card. CPU specifications and cosmetics are subject to change.

Getting Started:
1) Take the AutoTrak CPU out of the box to start the system connection.
2) Connect two (2) of the 998-1001-232 control adapters (check part numbers carefully) to serial com ports 1 and 2. The IR Reference camera will be connected to Port 1 and the Tracking Camera will be connected to Port 2.
3) Connect the Keyboard and the Mouse to the AutoTrak CPU using USB ports.
4) Connect the computer monitor (not included) to the DE-15 (HD-15) on the AutoTrak CPU.
5) Connect the AC Power Cord, but do not turn on the computer yet.

Mounting the Cameras and Distance Limits:

The AutoTrak system is shipped with a dual HD-18 camera mount that can be mounted to a wall permanently or be mounted to an optional cart system. The vertically stacked camera arrangement is required for the AutoTrak software to track properly.

Consider the placement of the cameras carefully; the range of use is from 12’ (3.65m) and up to 40’ (12.2m). System positioning is critical for proper and consistent operation. If the distance from the presenter to the wall mounting location is greater than 40’ (12.2m), then an optional portable cart system is recommended to place the cameras in range of the IR Lanyard, which is required for the tracking system to acquire the IR LED light in order to track the presenter.

Mount the cameras with the IR Reference Camera on the top shelf of the dual mount and mount the Tracking Camera on the lower shelf of the dual mount.

Please mark and test the cables prior to termination. Please do not connect these cameras up to the Quick-Connect systems using the “guess/trial and error” method.
Installing the PTZ Cameras

- **The IR Reference Camera** requires two (2) Cat-5e cables run from the head-end equipment; one for composite video and power, and one for control. The installation steps for the IR Reference Camera are as follows:
  1) Identify the IR Reference Camera, the HD-18 with the 37mm lens adapter on the lens
  2) Screw on the 37mm to 58mm adapter ring
  3) Screw on the 58mm polarizing filter
  4) Screw on the 58mm band-pass IR filter.
  5) Mount this camera to the top shelf of the dual mount with the supplied ¼"-20 screws.
  6) Connect the 18”/45.8mm BNC to RCA Video Cable to the Composite (CVBS) BNC-M video connector on the back of the camera and connect the RCA-M connector to the RCA–F connector on the AutoTrak Quick-Connect Box 998-1105-020.
  7) Connect one side of the 12’/30.48cm Cat-5e Patch Cable to the EZ Power Video RJ-45 connector on the camera and the other end of the cable to the AutoTrak Quick-Connect Box 998-1105-020 to the end marked “IR Reference Camera”. This connector is only providing power to the EZ Power Video Port.
  8) Connect the 1st Cat-5e cable (up to 100’/30.5m not supplied) to the AutoTrak Quick-Connect Box 998-1105-020 to the RJ-45 port labeled “AutoTrak”. This Cat-5e cable is terminated at the head end to the other Quick-Connect Box (998-1105-001) RJ-45 connector.
  9) Take the composite output of the Quick-Connect Box 998-1105-001 and connect it to the AutoTrak CPU composite video input (you’ll need a RCA-M to RCA-M cable, which is not supplied) to the center yellow composite input on the back of the AutoTrak CPU.
  10) Connect the 2nd Cat-5e cable (up to 100’/30.5m - not supplied) to the RS-232/IR port on the camera, and at the head-end connect it to the Control Adapter that is on COM PORT 1 on the CPU.
  11) Connect the 24VDC power supply to the 998-1105-001 Quick-Connect Box.

- **The Tracking Camera** requires two (2) Cat-5e cables run from the head-end equipment; one for YPbPr video and power, and one for control.
  1) Identify the HD-18 Tracking Camera (the normal camera without the 37mm lens adapter).
  2) Mount this camera on the lower shelf of the mount with the supplied ¼"-20 screws
  3) Run one Cat-5e (up to 100/30.5m) cable between the EZ Power Video Port on the HD-18 camera to the EZCamera Power & HD Video Port on the 998-1105-016 HD-18 Quick-Connect SR Interface.
  4) Connect the HD Video YPbPr output to a high definition monitor (if using the HD-18 Quick-Connect SR Interface) or the DVI-D or the YPbPr output (or both) to a HD monitor.
  5) Run the 2nd Cat-5e from the RS-232/IR port on the back of the HD-18 camera to Control Adapter that is connected to COM PORT 2 on the CPU
  6) Connect the 24VDC Power supply to the HD-18 Quick-Connect Interface.

Booting up the System and Initial Set-up:

1) With the AutoTrak Belt Pack on (at least the system power switch on) and the lanyard plugged into the belt pack (with known good batteries), place the lanyard/belt pack in a centered location approximately 20’ (6.096m) from the AutoTrak stacked camera assembly and about 5’ (1.524m) off the floor to imitate the height of a presenter/instructor.

2) Turn on the cameras and AutoTrak CPU. The AutoTrak CPU should boot up to the AutoTrak application automatically. Click the Pause button to enter setup. The screen shot is below.
3) Plug the IR Reference Camera into a monitor for set-up purposes. With the IR Reference plugged into a monitor, the IR LEDs should be visible as white dots on a black background. These LEDs will be tracked as the presenter moves around the room. To aid in set-up, a temporary RCA Y-cable may be used to split the signal between the monitor and CPU.

4) Select the Presets Tab①, then the Reference Camera Tab②. Use the Position③ buttons to Center the IR lanyard in the monitor display horizontally and vertically.

5) Use the Zoom④ buttons (tele & wide) to increase the size of the lanyard in the display until the is approximately 1/3 the size of the video image on the monitor. Use the Position③ up/down buttons to locate the lanyard in the upper 1/2 of the screen so the presenter’s head is in the top ½ of the screen.

6) Click the Save⑤ button to save this default zoom and tilt position for the IR Reference Camera. The Load⑥ button is for recalling a previously saved preset.

7) Plug the composite video from the IR Reference Camera back into the middle yellow RCA-F jack on the back of the AutoTrak CPU.
8) With the Tracking Camera plugged into a monitor, select the Presets Tab and then the Tracking Camera Tab. Adjust the Position buttons and the Zoom buttons to tilt/zoom the camera to the desired presenter framing. Set the zoom position and the tilt angle of the Tracking Camera and click on the Save Preset Button to store the System Tracking Preset. The Load button is for recalling a previously saved preset.

![Tracking Camera Presets](image)

Note: The AutoPresenter Camera Presets are supported by AutoTrak when used in conjunction with an AutoPresenter 6x1 Seamless switcher and Automated Camera Preset Controller. A later section explains the connectivity and set-up when using these devices together.
9) On the Tuning① / Tracking② Camera page, Camera Select③ automatically detects the camera is being used as the Tracking Camera. The auto-detect choices are between the HD-18 and HD-20.

10) The Iris④ control allows the user to set the specific f-stop (iris value) of the camera for challenging lighting environments or use the system in Automatic mode. The system will auto set this value.

11) The Auto Focus Type⑤ allows the user to select the type of auto focus that is preferred. The Low and Bright Light setting is effective for bright to low light conditions. The Low Light setting allows for faster focusing in low light conditions. The system will auto set this value.

12) The Tilt Correction⑥ angle is to compensate for the different heights of the camera lens when the HD-18 cameras are mounted in a co-linear stacked array which is a highly preferred and recommended configuration. This correction angle is automatically figured by the system when the Tracking Camera Preset or the Reference Camera Preset is saved assuring that both cameras are pointing at the same target.

13) The Zoom Position⑦ is a reference position stored as part of the system Tracking Camera Preset.

14) The Pan Correction⑧ parameter should only be used if; there is absolutely no way that the cameras can be stacked in a co-linear array and have to be used side by side. The side by side configuration is not recommended. The stacked configuration is highly preferred.

15) After twenty about (20) seconds the IR Reference Camera will search and locate the IR lanyard. The lanyard was placed earlier at a specific central location and height and distance from the cameras in previous steps.

16) Once the lanyard is located, the Tracking Camera will acquire a shot of the lanyard. A slight manual adjustment may be necessary if the lanyard is not centered in the shot. To make the fine adjustment, loosen the ¼-20 screw(s) holding the Tracking Camera to the mount and move the Tracking Camera until the lanyard is centered in the display monitor. Re-tighten the ¼-20 screw and initial setup is complete.

To start AutoTrak click the Resume⑨ button.
**Important Notes Regarding AutoTrak**

- When setting up the IR Reference Camera, avoid the lights on the ceiling or other bright light sources. Bright light from any source or sunlight can overwhelm IR reception in the camera, making it impossible to distinguish the lanyard from the background light. Tilt the Reference Camera down and away from ceiling light cells to limit the stray light.
- The IR Reference Zoom Field of View (FOV) should be as wide as possible. When the IR Reference Camera is zoomed in too far on the tele end, the pan search speed must be slowed down, which could cause the acquisition of the presenter’s lanyard to take a much longer time.
- The AutoTrak CPU is a computer running a Linux OS. Please do not remove power from the AutoTrak CPU without first shutting the system down, as you would any other business computer. After the AutoTrak CPU is shut down it is safe to remove power. Also note that a quick power cycle can also wreak havoc with the AutoTrak CPU, just like any other computer.
- When the system is not being used, please note that the System Power on the belt pack should be turned off and the blue LED should be off to save battery life. The Lanyard battery life is expected at 6 to 8 hours, so please change or recharge the batteries regularly to insure proper IR LED light levels.
- Refer to the **Control Parameter Descriptions** table for definitions of the terminology used in the AutoTrak Software.

- **Using the AutoTrak as an Input to the AutoPresenter for Camera Presets**
  (If the AutoTrak and AutoPresenter are not being used together in a system – skip this section)

- AutoTrak Tracking Camera presets require configuration in both AutoTrak and AutoPresenter.
- In the AutoTrak, the actual camera preset positions are determined and stored. Each preset is selected based on a Preset Index and a Preset Trigger (AutoPresenter trigger number).
- In AutoPresenter, Presets (Input only) are identified and stored to a trigger number (1-72). A menu item (“AutoTrak Input”) must be set identifying which video input select (1-6) is to be used with AutoTrak video output.
- The AutoPresenter will send a command to the AutoTrak when a Preset Trigger is tripped with AutoTrak input select.
To Connect the AutoTrak to AutoPresenter (skip this section if an AutoPresenter is not part of the system):
1) Take the supplied 998-1001-232 Control Adapter and attach it to COM PORT 3 on the CPU.
2) Attach the 998-7200-232 Control Adapter to the RS-232 THRU port on the back of the AutoPresenter.
3) With a Cat 5e cable (not supplied) connect the two (2) control adapters list in steps 1 & 2 above.
4) A system shutdown and reboot will be required for the AutoTrak to recognize the AutoPresenter. For reference, the AutoPresenter port is identified on the Tuning/Setup screen.

To Set the Tracking Camera Presets in AutoTrak to be activated by AutoPresenter:
1) In the AutoPresenter Menus, select the menu item “AutoTrak Input” and select which input (1-6) to which the AutoTrak will be connected. This way up to six (6) trigger inputs, between 1 and 72, can be dedicated to preset positions for the AutoTrak Tracking Camera. These presets can be incorporated into the system and use the Vaddio trigger devices such as PresenterPOD, StepVIEW mats, AutoVIEW IR Sensors, MicVIEW push to talk mics or TouchVIEW RF buttons.
2) To set Tracking Camera presets, put the system in pause mode to get at the menus and click on the Presets tab and then the Tracking Camera tab.
   a. Adjust the Position (Pan/Tilt) and Zoom controls for the desired preset position.
   b. Assign this position Preset # (1-6) under the AutoPresenter Camera Presets area.
   c. Assign Trigger # (1-72) that is associated with the AutoPresenter trigger preset.
   d. Click on the Save button.
   e. To recall a preset position, set the Preset # (1-6) and click on Load.
3) As an example, if the AutoPresenter video input for the AutoTrak is Input 6, the AutoTrak preset is #1 which is triggered by input trigger #4 with a trigger device. Then anytime the presenter trigger input #4, the AutoPresenter will switch to Input 6 and the AutoPresenter will communicate to the AutoTrak which will send the Tracking Camera to go to Preset #1.
**Updating the System Software:**
1) To update the system software, contact Vaddio Tech Support or go to the Vaddio website to get the Zip File. Copy the file to Root Directory of USB Flash Drive (not included).
2) Turn off AutoTrak CPU.
3) Insert the USB flash drive into any available USB port of the AutoTrak CPU.
4) Turn ON the AutoTrak CPU. When the system recognizes a valid update file, a dialog box will open and ask the user to confirm or cancel the firmware update.
5) Confirm the update request and the update will be applied.
6) The system will reboot and be ready to operate.
7) Remove the USB flash drive and the update process is complete.

Note: On earlier versions of the software, the Update Tab is used to start the update.

**The About Tab:**
The About Tab’s purpose in life is to provide information on the Software Revision, supply Technical Support contact information and certain acknowledgements.
All Menu Screen Shots and Control Descriptions:

Tracking/Main Page

<table>
<thead>
<tr>
<th>Control</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pause/Resume  Button</td>
<td>Click/Press</td>
<td>Stop/Interrupt tracking</td>
</tr>
<tr>
<td>Shutdown Button</td>
<td>Click/Press</td>
<td>Close/Shutdown system</td>
</tr>
</tbody>
</table>
All Menu Screen Shots and Control Descriptions *(continued)*:

**Presets: Reference Camera**

![AutoTrak Systems with and without Audio Interface](image)

---

<table>
<thead>
<tr>
<th>Control</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera Control Position Up</td>
<td>Click/Press and hold</td>
<td>Direct Reference Camera Up</td>
</tr>
<tr>
<td>Button</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camera Control Position Down</td>
<td>Click/Press and hold</td>
<td>Direct Reference Camera Down</td>
</tr>
<tr>
<td>Button</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camera Control Position Left</td>
<td>Click/Press and hold</td>
<td>Direct Reference Camera Left</td>
</tr>
<tr>
<td>Button</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camera Control Position Right</td>
<td>Click/Press and hold</td>
<td>Direct Reference Camera Right</td>
</tr>
<tr>
<td>Button</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camera Control Position Home</td>
<td>Click/Press and hold</td>
<td>Direct Reference Camera Home</td>
</tr>
<tr>
<td>Button</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camera Control Zoom Tele</td>
<td>Click/Press and hold</td>
<td>Direct Reference Zoom In (Tele)</td>
</tr>
<tr>
<td>Button</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Camera Control Zoom Wide</td>
<td>Click/Press and hold</td>
<td>Direct Reference Zoom Out (Wide)</td>
</tr>
<tr>
<td>Button</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System Reference Load Preset</td>
<td>Click/Press</td>
<td>Load Reference Camera Preset</td>
</tr>
<tr>
<td>Button</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System Reference Save Preset</td>
<td>Click/Press</td>
<td>Save Current Zoom/ Tilt Reference Camera Preset</td>
</tr>
<tr>
<td>Button</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pause/Resume Button</td>
<td>Click/Press</td>
<td>Pause or Return to Tracking</td>
</tr>
<tr>
<td>Shutdown Button</td>
<td>Click/Press</td>
<td>Close/Shutdown system</td>
</tr>
</tbody>
</table>
All Menu Screen Shots and Control Descriptions (continued):

Presets: Tracking Camera & Presets for use with AutoPresenter

<table>
<thead>
<tr>
<th>Control</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera Control Position <strong>Up</strong> Button</td>
<td>Click/Press and hold</td>
<td>Direct Tracking Camera Up</td>
</tr>
<tr>
<td>Camera Control Position <strong>Down</strong> Button</td>
<td>Click/Press and hold</td>
<td>Direct Tracking Camera Down</td>
</tr>
<tr>
<td>Camera Control Position <strong>Left</strong> Button</td>
<td>Click/Press and hold</td>
<td>Direct Tracking Camera Left</td>
</tr>
<tr>
<td>Camera Control Position <strong>Right</strong> Button</td>
<td>Click/Press and hold</td>
<td>Direct Tracking Camera Right</td>
</tr>
<tr>
<td>Camera Control Position <strong>Home</strong> Button</td>
<td>Click/Press and hold</td>
<td>Direct Tracking Camera Home</td>
</tr>
<tr>
<td>Camera Control Zoom <strong>Tele</strong> Button</td>
<td>Click/Press and hold</td>
<td>Direct Tracking Zoom In (Tele)</td>
</tr>
<tr>
<td>Camera Control Zoom <strong>Wide</strong> Button</td>
<td>Click/Press and hold</td>
<td>Direct Tracking Zoom Out (Wide)</td>
</tr>
<tr>
<td>System Tracking <strong>Load Preset</strong> Button</td>
<td>Click/Press</td>
<td>Load Tracking Camera Preset</td>
</tr>
<tr>
<td>System Tracking <strong>Save Preset</strong> Button</td>
<td>Click/Press</td>
<td>Save Current Tilt &amp; Zoom as Tracking Camera Preset</td>
</tr>
<tr>
<td>AutoPresenter Presets - Preset: # Button</td>
<td>Click/Press Up/Down</td>
<td>Select AutoTrak preset index (1-6)</td>
</tr>
<tr>
<td>AutoPresenter Presets - Trigger: # Button</td>
<td>Click/Press Up/Down</td>
<td>Select AutoPresenter Trigger (1-72)</td>
</tr>
<tr>
<td>AutoPresenter Presets <strong>Load</strong> Button</td>
<td>Click/Press</td>
<td>Load selected preset</td>
</tr>
<tr>
<td>AutoPresenter Presets <strong>Save</strong> Button</td>
<td>Click/Press</td>
<td>Save selected preset</td>
</tr>
<tr>
<td><strong>Pause/Resume</strong> Button</td>
<td>Click/Press</td>
<td>Pause or Return to Tracking</td>
</tr>
<tr>
<td><strong>Shutdown</strong> Button</td>
<td>Click/Press</td>
<td>Close/Shutdown system</td>
</tr>
</tbody>
</table>

**Note 1:** AutoPresenter Presets Trigger Number “0” denotes no presets present.
**Note 2:** Status bar shows the Tracking Camera Pan/Tilt/Zoom positions and Pan/Tilt Speeds.
All Menu Screen Shots and Control Descriptions (continued):

Preset: Setup Speeds

<table>
<thead>
<tr>
<th>Feature</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pan Speed</td>
<td>Click/Press Up/Down</td>
<td>Select Pan Speed</td>
</tr>
<tr>
<td>Tilt Speed</td>
<td>Click/Press Up/Down</td>
<td>Select Tilt Speed</td>
</tr>
<tr>
<td>Save Button</td>
<td>Click/Press</td>
<td>Save Pan/Tilt Speed</td>
</tr>
<tr>
<td>Pause/Resume</td>
<td>Click/Press</td>
<td>Pause or Return to Tracking</td>
</tr>
<tr>
<td>Shutdown Button</td>
<td>Click/Press</td>
<td>Close/Shutdown system</td>
</tr>
</tbody>
</table>
All Menu Screen Shots and Control Descriptions (continued):

**Tuning: Algorithm**

<table>
<thead>
<tr>
<th>Control</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luminance Threshold</td>
<td>Click Up/Down</td>
<td>Minimum illumination to be considered a valid target (1-255)</td>
</tr>
<tr>
<td>Max Luminance Density</td>
<td>Slider Left/Right</td>
<td>Max luminance points to be considered a valid target (1-9999)</td>
</tr>
<tr>
<td>Search Left Limit</td>
<td>Click Up/Down</td>
<td>The Left most location, in degrees, to search for target.</td>
</tr>
<tr>
<td>Search Right Limit</td>
<td>Click Up/Down</td>
<td>The Right most location, in degrees, to search for target.</td>
</tr>
<tr>
<td>Move Left Limit</td>
<td>Click Up/Down</td>
<td>The Left most location, in degrees, camera can move.</td>
</tr>
<tr>
<td>Move Right Limit</td>
<td>Click Up/Down</td>
<td>The Right most location, in degrees, camera can move.</td>
</tr>
<tr>
<td>Search Pan Speed</td>
<td>Click Up/Down</td>
<td>Pan search speed and max tracking camera speed</td>
</tr>
<tr>
<td>Search Tilt Position</td>
<td>Click Up/Down</td>
<td>Reference camera tilt angle, in degrees</td>
</tr>
<tr>
<td>Projection Time</td>
<td>Click Up/Down</td>
<td>Tracking speed adjustment where higher value reduces speed.</td>
</tr>
<tr>
<td>Window Width</td>
<td>Click Up/Down</td>
<td>Wider Window Width reduces left-right movement. Narrow Window Width increases the left-right movement of the camera</td>
</tr>
<tr>
<td>Max Blind Time</td>
<td>Click Up/Down</td>
<td>Time, in sec, to wait after target loss to begin target re-acquisition</td>
</tr>
<tr>
<td>Max. Reacquisition Time</td>
<td>Click Up/Down</td>
<td>Time, in sec, to search for target before going into standby mode.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Control</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load Button</td>
<td>Click/Press</td>
<td>Load all tuning setting</td>
</tr>
<tr>
<td>Save Button</td>
<td>Click/Press</td>
<td>Save all tuning setting</td>
</tr>
<tr>
<td>Pause/Resume Button</td>
<td>Click/Press</td>
<td>Pause or Return to Tracking</td>
</tr>
<tr>
<td>Shutdown Button</td>
<td>Click/Press</td>
<td>Close/Shutdown system</td>
</tr>
</tbody>
</table>
All Menu Screen Shots and Control Descriptions (continued):

Tuning: Reference Camera

<table>
<thead>
<tr>
<th>Feature</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iris</td>
<td>Click Up/Down</td>
<td>Manual Mode allows Iris adjustment in steps (f-stops)</td>
</tr>
<tr>
<td>Auto Gain</td>
<td>Click Up/Down</td>
<td>Brightness gain used to make IR lanyard more visible (0-30)</td>
</tr>
<tr>
<td>Zoom Position</td>
<td>Slider Left/Right</td>
<td>Zoom position, in steps (0–9984), auto-stored when Reference Camera Preset is saved.</td>
</tr>
<tr>
<td>Load Button</td>
<td>Click/Press</td>
<td>Loads previously saved settings</td>
</tr>
<tr>
<td>Save Button</td>
<td>Click/Press</td>
<td>Saves tuning settings for IR Reference Camera</td>
</tr>
<tr>
<td>Pause/Resume Button</td>
<td>Click/Press</td>
<td>Pause or Return to Tracking</td>
</tr>
<tr>
<td>Shutdown Button</td>
<td>Click/Press</td>
<td>Close/Shutdown system</td>
</tr>
</tbody>
</table>
All Menu Screen Shots and Control Descriptions (continued):

**Tuning: Tracking Camera**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera Select</td>
<td>Click On</td>
<td>The system will auto-detect if a HD-18 Tracking Camera or HD-20 Tracking Camera is being used.</td>
</tr>
<tr>
<td>Iris</td>
<td>Click Up/Down</td>
<td>Auto Mode Manual Mode allows Iris adjustment in steps (f-stops) The system will auto set this value to start.</td>
</tr>
<tr>
<td>Auto Focus Type</td>
<td>Click Up/Down</td>
<td>Select Between “Low and Bright Light” Conditions or “Low Light” Conditions. The “Low and Bright Light” setting works best in rooms with bright spots and reflections (uneven lighting). The “Low Light” Setting works best in low to medium, even lighting environments and focusing is faster. The system will auto set this value to start.</td>
</tr>
<tr>
<td>Pan Correction</td>
<td>Click Up/Down</td>
<td>Value, in degrees, to adjust reference location used to move Tracking Camera. (FOR USE ONLY WITH SIDE BY SIDE CAMERA INSTALLATIONS - THIS CONFIGURATION IS NOT RECOMMENDED)</td>
</tr>
<tr>
<td>Tilt Correction</td>
<td>Click Up/Down</td>
<td>Value, in degrees, to adjust reference Tilt location used for the Tracking Tilt.</td>
</tr>
<tr>
<td>Zoom Position</td>
<td>Slider Left/Right</td>
<td>Zoom position, in steps (0-9984), auto-stored when Tracking Camera Preset is saved.</td>
</tr>
<tr>
<td>Load Button</td>
<td>Click/Press</td>
<td>Loads previously saved settings</td>
</tr>
<tr>
<td>Save Button</td>
<td>Click/Press</td>
<td>Saves tuning settings for Tracking Camera</td>
</tr>
</tbody>
</table>

⚠️ **NOTE:** Bright and natural sunlight containing too much IR light can hinder AutoTrak’s performance.
## All Menu Screen Shots and Control Descriptions (continued):

### Tuning: Setup

![AutoTrak Tuning Menu](image)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Description</td>
<td>Type # and letters</td>
<td>Names file for Exporting Parameters</td>
</tr>
<tr>
<td>Pan Speed</td>
<td>Click Up/Down</td>
<td>Max Pan speed, in degrees/Sec</td>
</tr>
<tr>
<td>Tilt Speed</td>
<td>Click Up/Down</td>
<td>Max Tilt speed, in degrees/Sec</td>
</tr>
<tr>
<td>Zoom Speed</td>
<td>Click Up/Down</td>
<td>Max Zoom speed</td>
</tr>
<tr>
<td>Auto Presenter Port</td>
<td>Drop Down Select</td>
<td>Device Name for AutoPresenter Serial Port</td>
</tr>
<tr>
<td>Reference Camera Port</td>
<td>Drop Down Select</td>
<td>Device Name for Reference Camera Serial Port</td>
</tr>
<tr>
<td>Tracking Camera Port</td>
<td>Drop Down Select</td>
<td>Device Name for Tracking Camera Serial Port</td>
</tr>
<tr>
<td><strong>Restore Factory Defaults</strong></td>
<td>Click</td>
<td>Sets all parameters to factory preset defaults</td>
</tr>
<tr>
<td><strong>Export Parameters</strong></td>
<td>Click/Press</td>
<td>Opens dialogue box to allow user to export (save or store) current AutoTrak parameters to local or flash drive</td>
</tr>
<tr>
<td><strong>Import Parameters</strong></td>
<td>Click/Press</td>
<td>Opens dialogue box to allow user to export (store) current AutoTrak parameters. A USB drive must be inserted before clicking this button. The default location is the USB drive (a path such as /media/sdxx). Alternatively, the parameter file can be saved locally at /home/Vaddio.</td>
</tr>
<tr>
<td>Load Button</td>
<td>Click/Press</td>
<td>Loads previously saved settings</td>
</tr>
<tr>
<td>Save Button</td>
<td>Click/Press</td>
<td>Saves Setup Page settings</td>
</tr>
<tr>
<td>Pause/Resume Button</td>
<td>Click/Press</td>
<td>Pause or Return to Tracking</td>
</tr>
<tr>
<td>Shutdown Button</td>
<td>Click/Press</td>
<td>Close/Shutdown system</td>
</tr>
</tbody>
</table>

*Pop-up Warning for Restore Factory Defaults:*

If the Restore Factory Defaults button is selected, then the “Are You Sure” dialog box will pop up to protect the previously stored presets and make sure that resetting to the factory defaults is truly intended.
### All Menu Screen Shots and Control Descriptions (continued):

#### Tuning: Setup

![AutoTrak Systems with and without Audio Interface](image)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Description</td>
<td>Type # and letters</td>
<td>Names file for Exporting Parameters</td>
</tr>
<tr>
<td>Pan Speed</td>
<td>Click Up/Down</td>
<td>Max Pan speed, in degrees/Sec</td>
</tr>
<tr>
<td>Tilt Speed</td>
<td>Click Up/Down</td>
<td>Max Tilt speed, in degrees/Sec</td>
</tr>
<tr>
<td>Zoom Speed</td>
<td>Click Up/Down</td>
<td>Max Zoom speed</td>
</tr>
<tr>
<td>Auto Presenter Port</td>
<td>Drop Down Select</td>
<td>Device Name for AutoPresenter Serial Port</td>
</tr>
<tr>
<td>Reference Camera Port</td>
<td>Drop Down Select</td>
<td>Device Name for Reference Camera Serial Port</td>
</tr>
<tr>
<td>Tracking Camera Port</td>
<td>Drop Down Select</td>
<td>Device Name for Tracking Camera Serial Port</td>
</tr>
<tr>
<td>Restore Factory Defaults*</td>
<td>Click</td>
<td>Sets all parameters to factory preset defaults</td>
</tr>
<tr>
<td>Export Parameters</td>
<td>Click/Press</td>
<td>Opens dialogue box to allow user to export (save or store) current AutoTrak parameters to local or flash drive</td>
</tr>
<tr>
<td>Import Parameters</td>
<td>Click/Press</td>
<td>Opens dialogue box to allow user to export (store) current AutoTrak parameters. A USB drive must be inserted before clicking this button. The default location is the USB drive (a path such as /media/sdxx). Alternatively, the parameter file can be saved locally at /home/Vaddio.</td>
</tr>
<tr>
<td>Load Button</td>
<td>Click/Press</td>
<td>Loads previously saved settings</td>
</tr>
<tr>
<td>Save Button</td>
<td>Click/Press</td>
<td>Saves Setup Page settings</td>
</tr>
<tr>
<td>Pause/Resume Button</td>
<td>Click/Press</td>
<td>Pause or Return to Tracking</td>
</tr>
<tr>
<td>Shutdown Button</td>
<td>Click/Press</td>
<td>Close/Shutdown system</td>
</tr>
</tbody>
</table>

*Pop-up Warning for Restore Factory Defaults:*

If the Restore Factory Defaults button is selected, then the “Are You Sure” dialog box will pop up to protect the previously stored presets and make sure that resetting to the factory defaults is truly intended.
Control Parameter Descriptions:
Refer to this table for definitions of the terminology used in the AutoTrak Software

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Luminance Threshold</td>
<td>This is the minimum IR brightness level indicating the IR lanyard is present in the video frame. The actual value is calculated from the video capture data received from the camera. Default = 180 Range 1-255.</td>
</tr>
<tr>
<td>Max Luminance Density</td>
<td>This is the maximum number of light points to accept the current frame as containing the lanyard. This value could be lowered to restrict false lanyard readings. When a value is read higher than this value, it is ignored, and the “Find Lanyard” processing is restarted. Default = 2000 Range 1-9999.</td>
</tr>
<tr>
<td>Projection Time</td>
<td>This value is used to reduce the search pan speed based on the projected next position. A larger value will increase the lag time when following the detected lanyard, while lower values will increase the number of camera adjustments. This parameter works in conjunction with the ‘Search Pan Speed parameter’. Default = .25.</td>
</tr>
<tr>
<td>Max Blind Time</td>
<td>This value defines the time to wait after the detected lanyard is lost before re-starting the lanyard search. This parameter is used to account for temporary lanyard loss due to a block condition. Increasing the value will delay the re-start of the Find Lanyard search. Higher values may be counterproductive where lanyard loss is due to ‘Bright Spots’. Bright spots are non-lanyard light sources which mask out the IR light. Default = 5 seconds.</td>
</tr>
<tr>
<td>Search Left Limit</td>
<td>This value, in degrees, is the leftmost point of travel for the camera lanyard search.</td>
</tr>
<tr>
<td>Search Right Limit</td>
<td>This value, in degrees, is the rightmost point of travel for the camera lanyard search.</td>
</tr>
<tr>
<td>Move Left Limit</td>
<td>This value, in degrees, is the leftmost point of travel for the camera to move.</td>
</tr>
<tr>
<td>Move Right Limit</td>
<td>This value, in degrees, is the rightmost point of travel for the camera to move.</td>
</tr>
<tr>
<td>Search Pan Speed</td>
<td>This value indicates the maximum speed for pan movement.</td>
</tr>
<tr>
<td>Search Tilt Position</td>
<td>This value, in degrees, defines the fixed Reference Tilt angle.</td>
</tr>
<tr>
<td>Max Reacquisition Time</td>
<td>This value indicates the maximum find lanyard time. When this time expires, the Reference and Tracking Cameras are returned to home. They will wait until IR is received again to restart. Default = 60 seconds.</td>
</tr>
<tr>
<td>Window Width</td>
<td>This value, in degrees, is the “Close Enough Zone”. When the camera movement reaches in this window, movement stops. A smaller width will provide more accurate centering, while a larger width will reduce the number of camera movements. Default = 20.</td>
</tr>
<tr>
<td>Reference Zoom Position</td>
<td>This value, in steps, directs the zoom setting of the IR Reference Camera. A lower number will make the camera movement appear smoother but the lanyard needs to be large enough in the image to be recognized. The larger the number, the larger the Lanyard but this reduces the overall capture size and will force a reduction in the ‘Search Pan Speed’ and an increase of the ‘Projection Time’ parameters to allow enough capture data received to recognize the Lanyard.</td>
</tr>
<tr>
<td>Auto Gain</td>
<td>This value increases the IR Camera gain to recognize the lanyard. Default = 30, Range 0 – 30.</td>
</tr>
<tr>
<td>Pan Correction</td>
<td>This value, in degrees, overcorrects the Reference Camera target used to calculate the Tracking Camera pan location when the configuration uses side by side cameras (CONFIGURATION NOT RECOMMENDED).</td>
</tr>
<tr>
<td>Tilt Correction</td>
<td>This value, in degrees, overcorrects the Reference Camera target used to calculate the Tracking camera tilt location. This parameter automatically adjusts the Reference Tilt to compensate for the distance vertically between the cameras.</td>
</tr>
<tr>
<td>Tracking Zoom Position</td>
<td>This value, in steps, directs the zoom setting of the tracking camera.</td>
</tr>
<tr>
<td><strong>Setup Pan Speed</strong></td>
<td>This value, degrees’ is used in the ‘User Interface’ to set camera presets.</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Setup Tilt Speed</strong></td>
<td>This value, degrees’ is used in the ‘User Interface’ to set camera presets.</td>
</tr>
<tr>
<td><strong>AutoPresenter Port</strong></td>
<td>This string represents the Device name of the serial port used to communicate with an AutoPresenter.</td>
</tr>
<tr>
<td><strong>Reference Camera Port</strong></td>
<td>This string represents the Device name of the serial port used to communicate with the IR Reference Camera.</td>
</tr>
<tr>
<td><strong>Tracking Camera Port</strong></td>
<td>This string represents the Device name of the serial port used to communicate with the Tracking Camera.</td>
</tr>
<tr>
<td><strong>Iris Control Ref. Camera</strong></td>
<td>This parameter is used to reduce the light and increase the contrast of the lanyard IR emitters. Default value is in parenthesis.</td>
</tr>
<tr>
<td><strong>Iris Control Tracking Camera</strong></td>
<td>This parameter is used to adjust the iris (f-stop) to prevent blooming between light and dark areas in auto iris mode. The Default value is Auto mode, but if blooming within the presenter area is a problem, switch to manual.</td>
</tr>
<tr>
<td><strong>Camera Select</strong></td>
<td>This parameter is used select either the AutoTrak HD-18 or AutoTrak HD-20 as the Tracking Camera (Iris values are different between cameras). Note: The HD-18 is always the reference camera.</td>
</tr>
<tr>
<td><strong>Auto Focus Type</strong></td>
<td>This parameter allows the user to select the Auto Focus method. The two (2) options are; Low Light – works in average and even light conditions, Low and Bright Light – works better in rooms with bright spots and reflections. Bright light containing IR will hinder AutoTrak operation.</td>
</tr>
</tbody>
</table>

Details on the Vaddio AutoTrak HD-18 Pan/Tilt/Zoom Cameras used in the AutoTrak System:

Camera Features:

1) **Camera/Sensor/Optics:**
1/3-Type, Megapixel HD CCD image sensor is combined with an 18x optical zoom lens, for capturing high-quality HD video.

2) **Tally Light:**
A red tally light is illuminated when the camera receives a VISCA command from an external control system and tally is triggered.

3) **IR Sensors:**
IR sensors are built into the front of the WallVIEW HD-18 to receive IR signals from the IR remote control supplied with the camera.

4) **Power Light:**
A blue power light is illuminated when the camera is turned on.
5) **RS-232 In & IR Out:**
The RS-232 accepts modified Canon control protocol for camera control.

6) **DIP Switch Settings:**
Settings for IR remote, baud rate, SD output format, image flip can be configured on these switches. See Page 31 for additional information switch settings.

7) **HD Video Select:**
A rotary switch allows the user to choose the component HD output video resolution and format. See Page 31 for additional information on switch settings.

8) **12 VDC Input**
NOTE: The power input is not used with the AutoTrak system. This is only used on the standard, ClearVIEW HD-18 camera.

9) **YPbPr Video Output:**
Component HD video is fed through the DB-15 connector.

10) **SD Video Output:**
Standard definition video is fed through the BNC connector.

11) **EZ Power Video Port:**
CAT-5e cable is connected to the HD-18 Quick-Connect SR Interface. The EZ Power Video Port supplies power to the camera and returns component HD video up to 100’ (30.5 m).

12) **Slot for Optional Cards**
Optional slot cards can be plugged into the WallVIEW HD-18 camera through the slot in the back of the camera base.
Quick Connect Interfaces

- **HD-18 Quick-Connect SR Interface I/O:**
  1-RU 1/3 Rack Size, used with AutoTrak Systems 999-7200-000 and 999-7205-000

1) **Power Input:** 24 VDC, 2.0 Amp Power Connection, 5.5mm OD x 2.5mm ID, Positive Center, delivers power to the HD-18 via the EZCamera Port.

2) **EZCamera Power & HD Video Port:** The CAT-5e connection that extends to the EZ Power Video connector on back of the HD-18 camera. Maximum distance on the CAT-5e cable is 100’ (30.5 m).

3) **HD Video Output:** DE-15F (HD-15F) connector outputs the component (YPbPr) HD video extended from the camera over CAT-5 cabling.

4) **IR Output:** With the IR pass-thru turned on at the camera (see Camera Settings section), send IR from third-party IR remote controls through the HD-18 to third-party equipment, such as videoconference codecs. IR can be either modulated for use with IR emitters or non-modulated signals direct IR inputs for added flexibility.

5) **RS-232 Input & Output Jacks:** When using the IR pass-thru function, the IR signals are returned from the HD-18 via the RS-232 CAT-5e cable and delivered as modulated and non-modulated signals to the IR Output ports. If IR forwarding is not used, as in the case of the AutoTrak system, this control port can be bypassed and control is routed directly to the HD-18 camera.

- **Quick-Connect DVI/HDMI - SR Interface:**
  1-RU ½ Rack Size, used with AutoTrak Systems 999-7210-000 and 999-7215-000

1) **Blue LED Power Indicator.**

2) **24 VDC Power Port:** Coax Power Connector, 5.5mm OD x 2.5mm ID, Positive Center.

3) **Recessed Color Space Conversion Switch:** Toggles between HDMI YCbCr and sRGB (RGBHV) color space. Change the color space to accommodate either YCbCr or RGBHV monitors.

4) **RS-232 Control Input (from joystick controller, codec or control system).**

5) **To Camera:** RS-232 Control to & from Camera and IR signals returned from the camera.

6) **Daisy Chain Control Port:** Daisy Chain Control Emulation (DCCE) output to next Quick-Connect DVI/HDMI SR Interface (does not function with the AutoTrak System).

7) **IR Output Port:** Non-modulated (for hard connections) and Modulated for use with IR emitters.

8) **DVI-D Output:** High Definition Multimedia Interface (HDMI) Transmitter, HDMI (v 1.3 with deep color) and DVI v 1.0 Compliant.

9) **YPbPr Output:** Analog Component Video Output on DE-15F (HD-15F) Connector, Resolutions up to 1080p/60 with monitor support.

10) **EZCamera Power & HD Video Port:** Supplies power to camera and returns HD video from the camera via Cat-5e. Maximum distance on the CAT-5e cable is 100’ (30.5 m).
**AutoTrak HD-18 Switch Settings:**
These switch settings must be set in accordance with the peripherals used in the system. For the AutoTrak, the required settings are noted. On the bottom of the camera there is a label that defines the 10-position dip switch functions and the rotary HD/YPbPr Video Select switch.

![Rear panel of HD-18 PTZ Camera](image)

**Switch Setting Label on bottom of HD-18:**

<table>
<thead>
<tr>
<th>DIP SWITCH SETTINGS</th>
<th>HD VIDEO SELECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR 1 &amp; 2 UP ON</td>
<td>720p/59.94</td>
</tr>
<tr>
<td>IR OUT OFF</td>
<td>8</td>
</tr>
<tr>
<td>9600bps SD NTSC</td>
<td>576i/25</td>
</tr>
<tr>
<td>38400bps SD PAL</td>
<td>1</td>
</tr>
<tr>
<td>SD 6 &amp; 7 UP</td>
<td>1080i/59.94</td>
</tr>
<tr>
<td>SD 4:3</td>
<td>2</td>
</tr>
<tr>
<td>IMAGE FIP OFF</td>
<td>1080p/60</td>
</tr>
<tr>
<td>TEST BARS ON</td>
<td>C</td>
</tr>
<tr>
<td>OFF</td>
<td>720p/50</td>
</tr>
<tr>
<td>IR 2 ON</td>
<td>5</td>
</tr>
<tr>
<td>1080/50</td>
<td>D</td>
</tr>
<tr>
<td>IR 3 ON</td>
<td>8</td>
</tr>
<tr>
<td>1080p/50</td>
<td>E</td>
</tr>
<tr>
<td>38400bps SD SQ</td>
<td></td>
</tr>
<tr>
<td>SD LB</td>
<td>1080p/30</td>
</tr>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

**Dip Switch Settings**
- **IR 1, 2 & 3:** These settings, using switches 1 & 2, determine the IR frequency of the one IR remote control that was supplied with your system. The IR remote can operate up to three different PTZ cameras from one remote, using the selector buttons at the top of the remote.
- **IR Out:** The IR output is returned to the Quick-Connect on the RS-232 RJ-45 jack on the back of the camera. **Leave this switch in the ON position on both HD-18 cameras for use with AutoTrak.** **When this switch is in the ON position, the IR Remote is overridden.**
- **Baud Rate:** The options for baud rate are 9600 or 38,400 for RS-232. **Set to 9600bps for AutoTrak.**
- **SD Output Frequency:** Select either NTSC or PAL as the output for the camera’s SD signal that is transmitted on the BNC connector. For **North America, for the IR Reference camera set to NTSC for the AutoTrak. For International systems, use the PAL setting**
- **SD Output Size:** Three options are available for the SD output, select from crop, squeeze or letterbox. Set this parameter accordingly to the peripherals used.
- **Image Flip:** Turning Image Flip on (switch down), will flip the image and allow the camera to be inverted. **For AutoTrak, set image flip to OFF.**
- **Test Bars:** Turning this switch on will override the camera video output and send non-standard 75% test video bars from the camera output. The test color bars are intended as a convenience for testing the signal path and for use with the HD-18 CCU System and diagnostics of configuration cabling.
- **Switch 10:** This switch is unused, and should be left in the OFF position.

**HD Video Select:**
This rotary switch sets the HD YPbPr video output resolution. Use the resolution that works well with the peripheral equipment (monitors, codecs, video mixers, etc.). Not all monitors can handle all the resolutions on this table. Please choose the resolution that best serves your peripheral equipment. Finding the sweet spot can be a bit of a challenge due to the scalers built in to cameras, monitors, video mixers and video processors.
AutoTrak General Specifications:

<table>
<thead>
<tr>
<th>AutoTrak Belt Pack and Lanyard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Battery Type and Size</strong></td>
</tr>
<tr>
<td><strong>Battery Life</strong></td>
</tr>
<tr>
<td><strong>Connectors</strong></td>
</tr>
<tr>
<td><strong>Battery Pack Size</strong></td>
</tr>
<tr>
<td><strong>Battery Pack Weight</strong></td>
</tr>
<tr>
<td><strong>Lanyard Necklace Length</strong></td>
</tr>
<tr>
<td><strong>Lanyard Cable Length</strong></td>
</tr>
<tr>
<td><strong>Lanyard Cable</strong></td>
</tr>
<tr>
<td><strong>Lanyard Weight with Cable</strong></td>
</tr>
</tbody>
</table>

AutoTrak CPU:

<table>
<thead>
<tr>
<th>Processor</th>
<th>Intel® Atom™ Dual Core Processor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphics</td>
<td>Intel Graphics Media Accelerator</td>
</tr>
<tr>
<td>RGBHV Output</td>
<td>One (1) DE-15F (HD-15F) Connector</td>
</tr>
<tr>
<td>Video Capture Card</td>
<td>Internal with 3-RCA-F and 1-Y/C-F Connectors, Use the center RCA connector for AutoTrak</td>
</tr>
<tr>
<td>Memory</td>
<td>1GB DDR2</td>
</tr>
<tr>
<td>Storage</td>
<td>16GB SSD</td>
</tr>
<tr>
<td>Ethernet</td>
<td>Two (2) Gb Ethernet ports on RJ-45</td>
</tr>
<tr>
<td>RS-232 Interfaces</td>
<td>Three (3) RS-232 on DB-9M (DE-9M)</td>
</tr>
<tr>
<td>USB Ports</td>
<td>Six (6) USB 2.0 Ports</td>
</tr>
<tr>
<td>Dimensions/Weight</td>
<td>1-RU - 1.72” (43.7mm) H x 18.93” (480.8mm) W x 10” (254mm) D / 8.8lbs (4.0kg)</td>
</tr>
<tr>
<td>Power</td>
<td>110V - 240V 50/60Hz Switching Power Supply (internal)</td>
</tr>
</tbody>
</table>

AutoTrak HD-18 Cameras:

<table>
<thead>
<tr>
<th>Image Sensor</th>
<th>1/3-Type CCD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture Elements</td>
<td>1.3 Megapixel</td>
</tr>
<tr>
<td>Signal System</td>
<td>HD: 1080p, 1080i or 720p @ 59.94: 1080p @ 60/50/30/25; 1080i or 720p @ 50</td>
</tr>
<tr>
<td></td>
<td>SD: Composite - NTSC or PAL (simultaneous HD &amp; SD Out) Crop, Squeeze or Letterbox Modes</td>
</tr>
<tr>
<td>Lens</td>
<td>18x Optical Zoom</td>
</tr>
<tr>
<td>Focal Length</td>
<td>f=4.7 to 84.6mm</td>
</tr>
<tr>
<td>Horizontal Viewing Angle</td>
<td>3.2 to 55.2 degrees (16:9)</td>
</tr>
<tr>
<td>Video S/N Ratio</td>
<td>&gt;50 dB</td>
</tr>
<tr>
<td>Invertible</td>
<td>Yes</td>
</tr>
<tr>
<td>Minimum Illumination</td>
<td>1.8 Lux</td>
</tr>
<tr>
<td>Serial Communication</td>
<td>RS-232 (9600 - Default for AutoTrak)</td>
</tr>
<tr>
<td>Pan Range</td>
<td>+170 degrees to -170 degrees</td>
</tr>
<tr>
<td>Tilt Range</td>
<td>+90 degrees to -30 degrees</td>
</tr>
<tr>
<td>Dimensions (H x W x D)</td>
<td>8.55” (217.2mm) H x 6.748” (171.4mm) W x 7.134” (181.2mm) D</td>
</tr>
<tr>
<td>Weight</td>
<td>5.8 lbs (2.63 kg)</td>
</tr>
</tbody>
</table>

Audio Outputs for system 999-7200-000 and 999-7210-000 only:

| Mic Output Volume Control   | 10k Audio Taper Potentiometer |
| Switch Gear                | Tactile illuminated push button blue LED Power Switch (ON/OFF), and Mic Mute (Mute when lit) |
| Status Indicator           | Blue LED |
| Display/LED Indicators Speed | Less than 299,792,458 meters per second (accounting for the index of refractivity of air - 1.0003 |
| Antenna Connector          | One (1) RP-SMA connector |
| Power Supply/Connector     | 12 VDC, 1.0 Amp Switching Supply, 5.5mm OD x 2.5mm ID coax receptacle on AutoTrak |
| Weight                     | Approx. 3.3 lbs (1.496854821 kg) |
| Dimensions Audio Interface | 1.72” (43.688mm) H x 18.93 (480.822mm) W x 6” (152.4mm) D |

Part Numbers:

| 999-7200-000               | With HD-18 Quick-Connect SR Interface (YPbPr output on Tracking Camera) |
| 999-7205-000               | 999-7200-000 w/o AutoTrak Audio Interface and w/Worldwide Belt Pack |
| 999-7210-000               | With Quick-Connect DVI-D/HDMI SR Interface (YPbPr and DVI-D outputs on Tracking Camera) |
| 999-7215-000               | 999-7210-000 w/o AutoTrak Audio Interface and w/Worldwide Belt Pack |
| Origin                     | Made in the USA with the exception of the AutoTrak CPU (assembled in the USA) |

*All Specifications are subject to change without prior notice.
Warranty Information: (See Vaddio Warranty, Service and Return Policies posted on vaddio.com for complete details):

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. Please see Vaddio’s Service Terms and Conditions at vaddio.com for specific details and policies.

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 installation (plugging things in wrong), 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. Vaddio will only advance replace out of box failures or random equipment failures up to 30 days after the purchase date (not the install date).

Vaddio Technical Support: Vaddio technicians will determine and discuss with the customer the criteria for repair costs and/or replacement. Vaddio Technical Support can be contacted through one of the following resources: e-mail support at support@vaddio.com or online at www.vaddio.com.

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 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 clearly on the shipping label when returning the product. All products returned for credit are subject to a restocking charge without exception.

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. 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 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 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.

Other General Information:

Care and Cleaning
Do not attempt to take this product apart at any time. There are no user-serviceable components inside.

- Do not spill liquids in the product
- Keep this device away from food and liquid
- For smears or smudges on the product, wipe with a clean, soft cloth
- Use a lens cleaner on the lens
- Do not use any abrasive chemicals.

Operating and Storage Conditions:
Do not store or operate the device under the following conditions:

- Temperatures above 40°C (104°F) or temperatures below 0°C (32°F)
- High humidity, condensing or wet environments
- In inclement weather
- In swimming pools, airport bathrooms or bat caves
- Dry environments with an excess of static discharge
- In bear caves
- Under severe vibration
Compliance and CE Declaration of Conformity: AutoTrak CPU

Compliance testing was performed to the following regulations:

- **ICES-003, Issue 4: 2004**
- **EN-55011: 2007 + A2: 2007**
- **EN 55022: 2006 + A1: 2007**
- **CISPR 22: 1997**
- **EMC Directive 2004/108/EC**

### 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.

### 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’émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A présrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

### European Compliance

This product has been evaluated for Electromagnetic Compatibility under the EMC Directive for Emissions and Immunity and meets the requirements for a Class A digital device. 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 2004/108/EC**
- **EN-55011: 2007 + A2: 2007**
- **EN 55022: 2006 + A1: 2007**
- **EN 61000-6-4: 2007**
- **EN 61000-3-2: 2006**
- **EN 61000-3-3: 2008**
- **EN 61000-6-2: 2005**

- **EN 61000-4-2: 2008**
- **EN 61000-4-3: 2008**
- **EN 61000-4-5: 2005**
- **EN 61000-4-6: 2008**
- **EN 61000-4-8: 2009**
- **EN 61000-4-11: Second Edition: 2004**
Compliance Information:
AutoTrak Audio Interface (Receiver) Systems 999-7200-000 and 999-7210-000

FCC Part 15 Compliance
- This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15, Subpart B 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.

ICES-003 Compliance
ICES-003, Issue 4: 2004
This digital apparatus does not exceed the Class B 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 B préscrites dans le Règlement sur le brouillage radioélectrique édicte par le ministère des Communications du Canada.

Compliance Information: AutoTrak Belt Pack and Lanyard (Transmitter)

FCC Part 15 Subpart C, Section 15.249 Compliance
- This equipment has been tested and found to comply with the limits for a digital device, pursuant to Part 15, Subpart C 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.

ICES-003 Compliance
ICES-003, Issue 4: 2004
This digital apparatus does not exceed the Class B 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 B préscrites dans le Règlement sur le brouillage radioélectrique édicte par le ministère des Communications du Canada.
Compliance and CE Declaration of Conformity: AutoTrak Worldwide Belt Pack and Lanyard
For systems without Audio 999-7205-000 and 999-7215-000
Compliance testing was performed to the following regulations:

- **FCC Part 15, Subpart B** Class A
- **ICES-003, Issue 4: 2004** Class A
- **AS/NZS CISPR 22: 2009** Class A
- **VCCI V-3/2010.04** Class A
- **EMC Directive 2004/108/EC** Class A

**FCC**

**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.

**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 présrites dans le Règlement sur le brouillage radioélectrique édicte par le ministère des Communications du Canada.

**European Compliance**
This product has been evaluated for Electromagnetic Compatibility under the EMC Directive for Emissions and Immunity and meets the requirements for a Class A digital device. 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 2004/108/EC**
  - **EN 61000-4-3: 2006 + A1: 2008** Radiated Immunity
  - **EN 61000-4-4: 2004 + Corrigendum 2006** Test not applicable to this device.
  - **EN 61000-4-6: 2009** Test not applicable to this device.
  - **EN 61000-4-8: 2010** Power Frequency Magnetic Field
  - **EN 61000-4-11: Second Edition: 2004** Test not applicable to this device.
Compliance and CE Declaration of Conformity: Vaddio HD-18 HD PTZ Camera

Compliance testing was performed to the following regulations:

- **FCC Part 15, Subpart B** Class A
- **ICES-003, Issue 4**: 2004 Class A
- **AS/NZS CISPR 22**: 2009 Class A
- **VCCI V-3/2009.04** Class A
- **EMC Directive 2004/108/EC** Class A

**FCC**

**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.

**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’émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

**European Compliance**
This product has been evaluated for Electromagnetic Compatibility under the EMC Directive for Emissions and Immunity and meets the requirements for a Class A digital device. 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 2004/108/EC**
- **EN 61000-4-3**: 2006 Radiated Immunity
- **EN 61000-4-4**: 2004 + Corrigendum 2004 Electrical Fast Transients
- **EN 61000-4-5**: 2006 Surge Immunity
- **EN 61000-4-6**: 2007 Conducted Immunity
- **EN 61000-4-8**: 1993 + Amendment A1: 2001 Power Frequency Magnetic Field
- **EN 61000-4-11**: Second Edition: 2004 Voltage Dips, Interrupts and Fluctuations
Compliance and CE Declaration of Conformity: Quick-Connect DVI/HDMI SR Interface
Compliance testing was performed to the following regulations:

- FCC Part 15, Subpart B  
  Class A
- ICES-003, Issue 4: 2004  
  Class A
  Class A
- EMC Directive 2004/108/EC  
  Class A

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, Subpart B, 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.

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’emét pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A préscrites dans le Règlement sur le brouillage radioélectrique édicte par le ministère des Communications du Canada.

European Compliance
This product has been evaluated for Electromagnetic Compatibility under the EMC Directive for Emissions and Immunity and meets the requirements for a Class A digital device. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Ferrite cylinders are included in order to the Quick-Connect DVI/HDMI SR Interface to strictly comply with the European Community EMC Directives compliance. Use these ferrites to ensure the elimination of possible EMI interference from cell phones and AC motors.

Standard(s) To Which Conformity Is Declared:
EMC Directive 2004/108/EC

Conducted and Radiated Emissions

Immunity
  Electrostatic Discharge
- EN 61000-4-3: 2006  
  Radiated Immunity
- EN 61000-4-4: 2004 + Corrigendum 2006  
  Electrical Fast Transients
- EN 61000-4-5: 2006  
  Surge Immunity
- EN 61000-4-6: 2007  
  Conducted Immunity
- EN 61000-4-8: 1993 + Amendment A1: 2001  
  Power Frequency Magnetic Field
- EN 61000-4-11 Second Edition: 2004  
  Voltage Dips, Interrupts and Fluctuations
Appendix 1: HD-18 Connector Information

- **DE-15-F (HD-15F Connector)**

<table>
<thead>
<tr>
<th>Pin</th>
<th>YPbPr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pr</td>
</tr>
<tr>
<td>2</td>
<td>Y</td>
</tr>
<tr>
<td>3</td>
<td>Pb</td>
</tr>
<tr>
<td>4</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>Pr/GND</td>
</tr>
<tr>
<td>7</td>
<td>Y/GND</td>
</tr>
<tr>
<td>8</td>
<td>Pb/GND</td>
</tr>
<tr>
<td>9</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>-</td>
</tr>
<tr>
<td>11</td>
<td>-</td>
</tr>
<tr>
<td>12</td>
<td>-</td>
</tr>
<tr>
<td>13</td>
<td>-</td>
</tr>
<tr>
<td>14</td>
<td>-</td>
</tr>
<tr>
<td>15</td>
<td>-</td>
</tr>
</tbody>
</table>

- **EZCamera Power & HD Video RJ-45 Connector Pin-outs** (For HD-18 Camera and Quick-Connect SR and Quick-Connect DVI/HDMI SR Interfaces - 568B Wiring Standard)

<table>
<thead>
<tr>
<th>Pin</th>
<th>YPbPr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Power+</td>
</tr>
<tr>
<td>2</td>
<td>Power-</td>
</tr>
<tr>
<td>3</td>
<td>Y+</td>
</tr>
<tr>
<td>4</td>
<td>PB+</td>
</tr>
<tr>
<td>5</td>
<td>PB/GND</td>
</tr>
<tr>
<td>6</td>
<td>Y/GND</td>
</tr>
<tr>
<td>7</td>
<td>PR+</td>
</tr>
<tr>
<td>8</td>
<td>PR-</td>
</tr>
</tbody>
</table>

- **RS-232 and IR OUT RJ-45 Connector Pin-outs** (For HD-18 Camera and Quick-Connect SR and Quick-Connect DVI/HDMI SR Interfaces - 568B Wiring Standard)

<table>
<thead>
<tr>
<th>Pin #</th>
<th>RS-232 and IR OUT RJ-45</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unused</td>
</tr>
<tr>
<td>2</td>
<td>Unused</td>
</tr>
<tr>
<td>3</td>
<td>IR Out (TTL level)</td>
</tr>
<tr>
<td>4</td>
<td>IR Output (Differential Signal to HD-18 Quick-Connect)</td>
</tr>
<tr>
<td>5</td>
<td>IR Ground (Differential Signal to HD-18 Quick-Connect)</td>
</tr>
<tr>
<td>6</td>
<td>GND</td>
</tr>
<tr>
<td>7</td>
<td>RXD (from TXD of control source)</td>
</tr>
<tr>
<td>8</td>
<td>TXD (to RXD of control source)</td>
</tr>
</tbody>
</table>

**Communication Specification**

Communication Speed: 9600 bps
- Start bit: 1
- Stop bit: 1
- Data bits: 8
- Parity: None
- No Flow control

**Notes:**
- A total of six (6) presets can be accessed with a control system via RS-232
- Each Command must be followed by a line feed <lf>
- Presets are set up on the Preset-Tracking Camera tabs under the AutoPresenter Camera Preset Area. No trigger assignments are needed. Set the Tracking Camera position and store the preset. Recall the preset with the commands above.
- The Preset OFF command must be issued to return to active tracking.
Optional AutoTrak System Cart

In order to put the system within 30' to 40' of the presenter in larger auditoriums, an AutoTrak System Cart system is recommended. The Vaddio Edge series carts are built to be robust, portable and extremely strong. The AutoTrak System Cart includes:

Edge Model ASC-3755  
P/N: 799-7200-000 - Assembled  
P/N: 799-7200-001 - Flat Packed

AutoTrak System Cart Includes:

One (1) Edge HighBoy Cart HB-3755  
- Fits 37" to 55" diagonal flat screen monitors up to 600mm x 400mm VESA Hole Pattern  
- Two (2) Monitor brackets tilt 12° forward and 5° back  
- Attractive metallic silver and black finishes  
- 4" (101mm) twin wheel casters with 225 lbs rating each  
- Two (2) Locking casters two stabilizing/leveler feet  
- Overall dimensions/weight: 63.25" (1605mm) H x 34.5" W (876mm) x 33.75" (858mm) D / 83.6 lbs (38 kg)

One (1) Edge EE-9RU 9-Space Equipment Enclosure  
One (1) Dual Camera Mount  
One (1) Adjustable Vertical Support Pipe  
Mounting Hardware and ¼"-20 Screws

Note: Instructor LCD Confidence Monitor and the rack full of gear is not included.