INSIGHT VISION

Leading Edge Sewer Cameras

SEWER CAMERA MANUFACTURER

600 Dekora Woods Blvd.
Saukville, WI 53080, USA
Fax: 262-268-9950
www.insightvisioncameras.com

MANUAL

FOLLOW, LIKE AND WATCH

IRIS MAINLINE CRAWLER
Integrated Remote Inspection System

MADE IN THE USA

800.488.8177

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General Overview:

Thank you for purchasing the IRIS Mainline Crawler. Reading the documentation will help you make the most of your equipment.

The IRIS Integrated Remote Inspection System is a motorized robotic crawler with a motorized drum to rewind the cable. It has a 10.1" touch-screen which provides easy operation and multiple recording options.

What's Included:
- USER MANUAL
- 600 FT. CABLE IN A MOTORIZED REEL (w/ extendable rear handle)
- CRAWLER WITH ADJUSTABLE HEIGHT PAN & TILT CAMERA
- 120V POWER CABLE
- CRAWLER CONTROLLER
- SMALL & MID WHEEL SET (installed)
- 3/32 ALLEN WRENCH (strain relief)
- RAIN COVER
- LCD SCREEN COVER
- CRAWLER HARD CASE

Optional Available Accessories:
- PNEUMATIC WHEELS
- LOWERING HOOKS
- 512HZ SONDE

Additional Accessories:
  Poles
  Lowering Hook – Easily lower the crawler into the hole.
  Top Hole Roller – Place over the manhole to smoothly guide the crawler cable.
  Down Hole Roller – Reduce drag down in the hole.
  Tiger Tail – For use when a down hole roller can't be used to reduce drag.

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General Safety Guidelines:

WARNING:
Failure to follow the warnings and instructions may result in electrical shock, fire, serious injury or damage to equipment.

Work Area Safety Guide
Keep your work area clean and dry.
Observe proper confined space safety regulations including using triple gas test devices.
Do not operate equipment in explosive or flammable environments.
Keep children away when operating the system.

Electrical Safety Guide
Do not expose equipment to rain or wet environment.
Keep hands dry and all electrical connections dry.
Ensure all power cord, connectors and wires are in good working condition.
Always use with a ground fault protected AC source.

Personal Safety Guide
Be alert and aware of your environment.
Be prepared and follow instructions.
Use proper protective clothing when operating equipment.

Use Equipment with Care
Do not force the equipment.
Do not allow inexperience operators to operate equipment.
Maintain equipment and use only accessories that are recommended by the manufacturer.

For immediate assistance, contact Insight Vision.

Phone:	800-488-8177
Fax:	262-268-9952
Email Technical Service:	serviceteam@insightvisioncameras.com
Email Sales & Support:	sales@insightvisioncameras.com
Web Inquiry:	www.insightvisioncameras.com

Please complete the following information for future reference:

Serial Number: _____

Date of Purchase: _____

Place of Purchase: _____

The serial number is on the back of the unit. Please retain a copy of your manual and receipt of purchase, in the event of theft, fire or warranty service.

System Power-Up:

1 Push in the emergency stop.

2 Plug in the power cable on the back of the system and switch the power toggle to the ON position.

3 Connect the crawler to the mainline cable receptacle.

4 Tighten strain relief clamp using the provided allen wrench. Assure there is slack in the cable between strain relief and connector.

5 Set your camera height to desired pipe diameter using camera head adjustment cam.

6 Plug in the crawler controller into the specified USB controller port.

7 Press the power button on the face of the system. Select User option on boot-up screen (admin for service only).

8 Turn E-Stop Clockwise to turn on crawler.

9 Launch the Insight Vision App.

10 Click on the JS Interface in the Task Bar. Make sure Joystick & IRIS are green on JS Interface.

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Proper Reverse Operation:

1. After driving the crawler forward, the wheels are in gear, so they won't go backward. To disengage the clutch to put the wheels in neutral, the crawler needs to be driven in reverse for a couple seconds.

   IMPORTANT NOTE: grab the cable to provide tension so the crawler does not drive on to the cable or get caught in the strain relief.

2. Once the crawler is in neutral, flip the switch on the Reel Feed to "Auto Rewind".

3. Turn the "Variable Speed Control" dial to the right. You will hear the clutch engage on the reel and the reel will start bringing in the cable/crawler. Adjust it to the speed based on pipe conditions.

4. Once the crawler is close to the manhole entry point, turn off the "Variable Speed Control", turn the Reel Feed to "Off" and drive the crawler back using the controller to safely exit crawler from the pipe.

Shutting Down Your IRIS:

1 Push in the emergency stop to shut off power to the crawler.

2 Close the Insight Vision App *(Press X in the top right corner).*

3 Press the Windows Icon on the bottom left and Shut Down the computer.

4 Press Power OFF on the back of the reel and unplug the power.

5 Loosen strain relief guide screw with allen wrench and remove the cable.

6 Screw counter clockwise to disconnect crawler from cable.

Motorized Reel Control:

Front Control Panel:

1. **ON/OFF Power Button** – Turn **ON** and **OFF** the system.

2. **USB Crawler Controller Port** – To connect with the digital hand controller.

3. **USB Port** – To connect additional external device (e.g. headphone/microphone).

4. **Reel Speed Control Knob** – Control the speed of the motorized reel drum.
   - Turning the knob right will increase the speed.
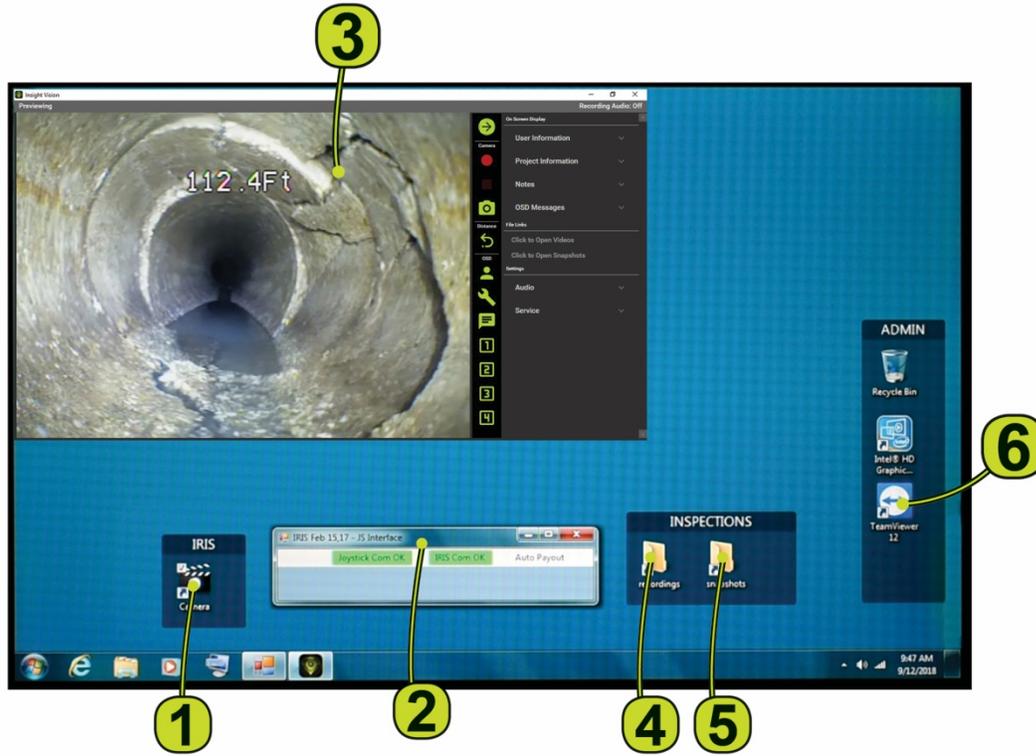   - Turning the knob left will decrease the speed.

> **Notice: To bring the crawler back with the reel using the Controller, momentarily drive the crawler in reverse to dis-engage the clutch. Auto assist payout is not a synchronized action between the reel and crawler. When operating in auto payout mode adjust the reel speed to match the tractor speed.**

5. **Feed Direction Switch** – Forward Assist Out and backward Reel In including auto-rewind.

6. **Emergency Stop Button –** Turn **ON** and Push to Shut **OFF** power to Crawler & Motorized Reel.

7. **10.1" Daylight Readable LCD Touch Screen**

8. **External Card Storage Bank –** USB 3.0, SD Card, Micro SD Card, XD Card, CF Card, MS Card.

Crawler Controller:

Lights Down
This decreases the LED brightness on the camera head front.

Lights UP
This increases the LED brightness on the camera head front.

Auto Payout
Activates & Deactivates The Payout Assist Feature.

Toggle Crawler Control
Switch Between Joystick and Directional Pad.

Crawler Control
↑ **UP** - Crawler Moves Forward
↓ **Down** - Crawler Moves Back

Camera Control
↑ **UP** - Rotates Camera Clockwise
↓ **Down** - Rotates Camera Counter-Clockwise
→ **Right** - Pans Camera Right
← **Left** - Pans Camera Left
Press Joystick Down - Reorients Camera Back To Upright Position

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Control System Application :

Control System Applications:

1. **IRIS Camera** – Opens the Insight Vision App.

2. **JS Interface** – Digital hand controller, reel status and Auto Payout

3. **Insight Vision App** – View, record, snapshot, document inspections & more.

4. **Recordings Folder** – Default folder for saved video inspections.

5. **Snapshots Folder** – Default folder for saved photos.

6. **Team Viewer App** – Remote Desktop Support for Training.

Notice:
You will see the window below when launching the IRIS Camera. It is required for the crawler operation, do not close out the pop-up window.

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Insight Vision App:
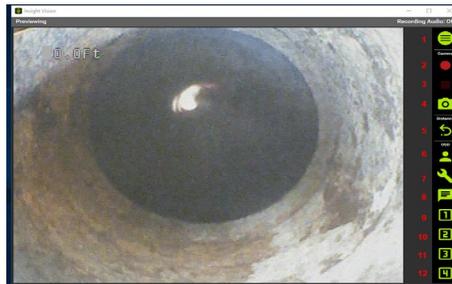
IRIS CAMERA

Clicking on the IRIS Camera application launches the Insight Vision App which allows you to view, record, snapshot, display information and more during inspections.

Recording Audio: Off
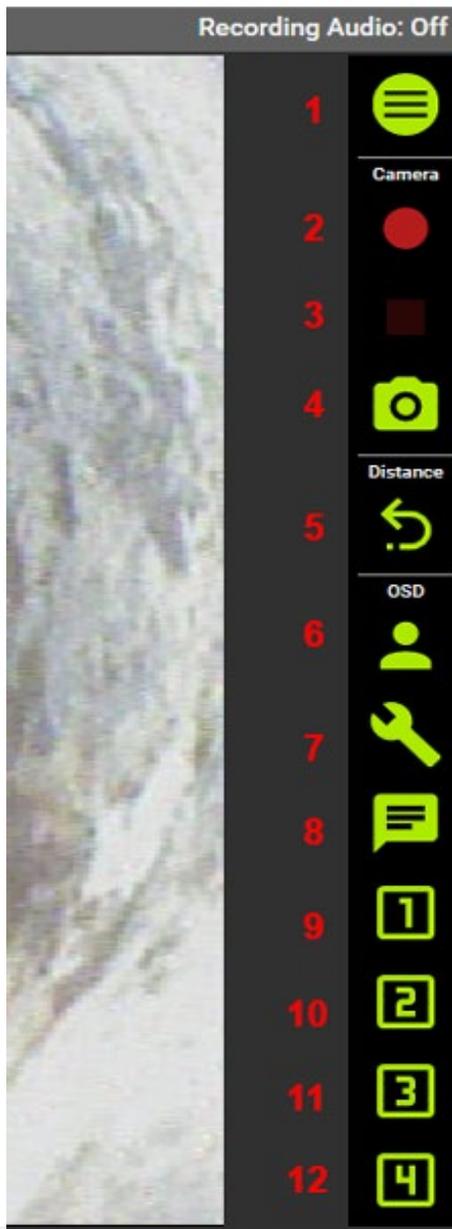
1. **Expand/ Minimize Menu Window**
2. **Record/ Pause**
3. **Stop Recording**
4. **Snapshot**
5. **Reset Distance Counter**
6. **Display User Information**
7. **Display Project Information**
8. **Display Additional Notes**
9. **Display Additional Message 1**
10. **Display Additional Message 2**
11. **Display Additional Message 3**
12. **Display Additional Message 4**
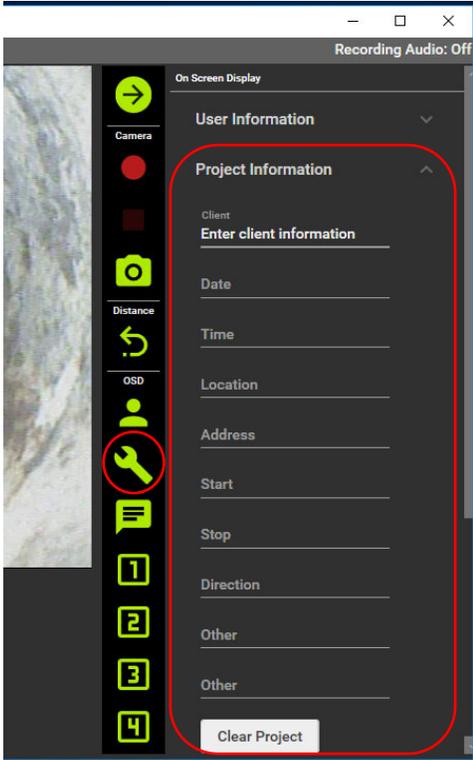
On Screen Display (Menu Window Expanded):
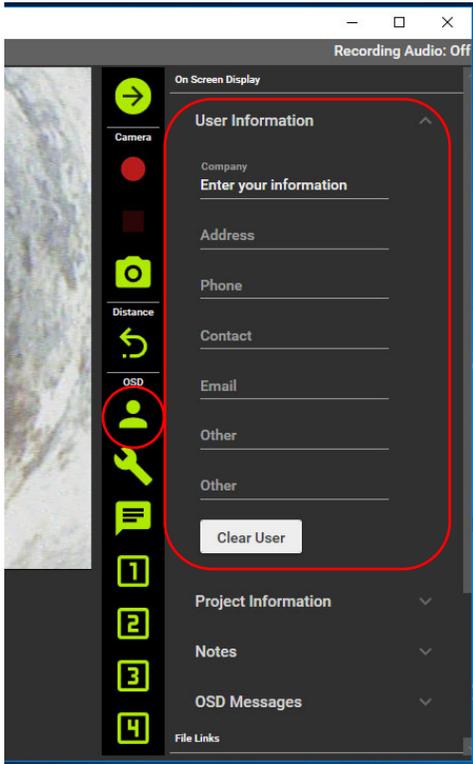
User Information
- Enter information about your business.
- Icon will display text on screen for about 10 seconds.
- **"Clear User"** to quickly erase all user information.
- **Note: The user information will be auto saved until new changes are made.**

FIELDS
Company
Address
Phone
**Contact**
Email
Other
Other

Project Information
- Enter project information for each project.
- Icon will display text on screen for 10 seconds.
- Simply click on**, "Clear Project"** to quickly erase all project information.
- **Note: The project information will be auto saved until new changes are made.**

FIELDS
Client
Date
Time
Location
Address
Start
Stop
Direction
Other
Other

INSIGHT VISION
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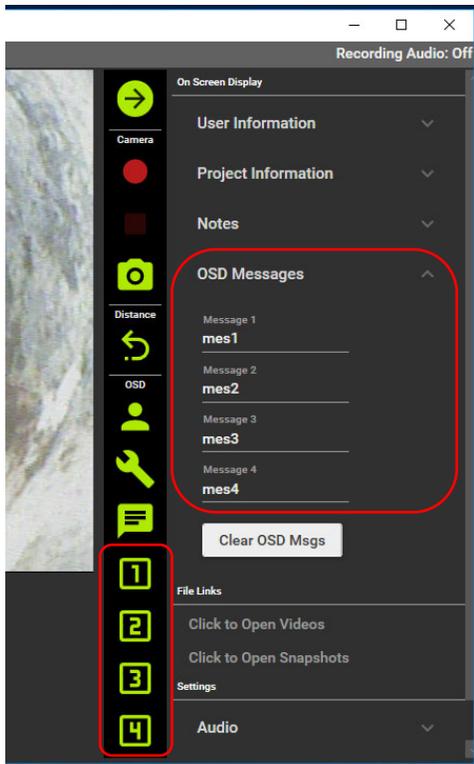SEWER CAMERA MANUFACTURER

On Screen Display (OSD) :
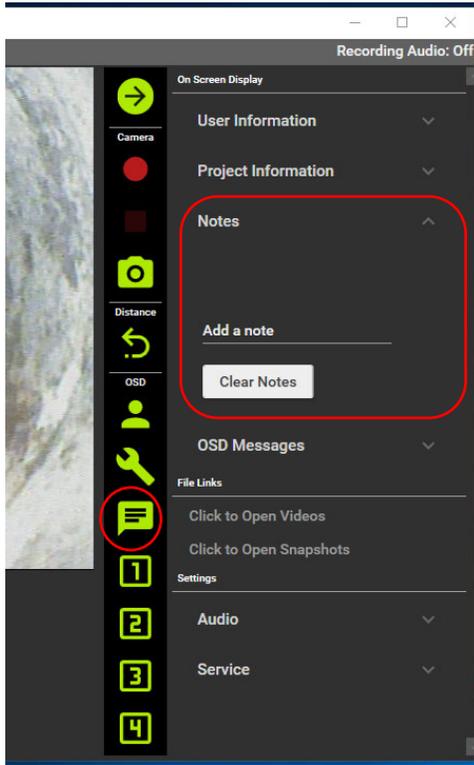
Notes
- Enter notes about each project, hitting enter will create a new line.
- Icon will display text on screen for 10 seconds.
- Simply click on, **"Clear Notes"** to quickly erase all notes.
- **Note: The notes will be auto saved until new changes are made.**

FIELDS
Add a note

OSD (On Screen Display) Messages
- Enter up to 4 custom on screen messages.
- Icons will display them on screen for 10 seconds.
- Simply click on, **"Clear OSD Msgs"** to quickly erase the desired message.
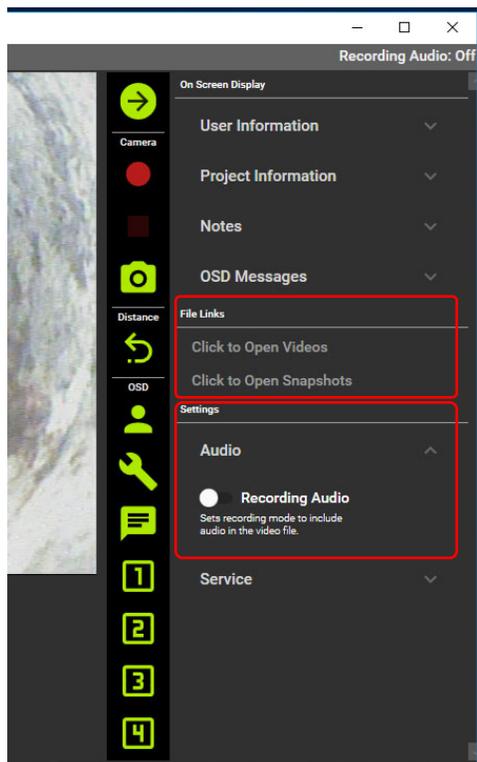- **Note: The messages will be auto saved until new changes are made.**

FIELDS
Message 1
Message 2
Message 3
Message 4

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On Screen Display (OSD) :

## File Links
- To access recorded videos, press **"Click to Open Videos"**
- To access recorded pictures, press **"Click to Open Snapshots"**
- **Notice: Videos can be played back using the system's media player (Windows Media Player). Pictures can be opened with the system's photo viewer.**

Settings
Audio
- Turn On/Off audio recording, a USB headset with microphone(not included) required to record audio (see page 15).
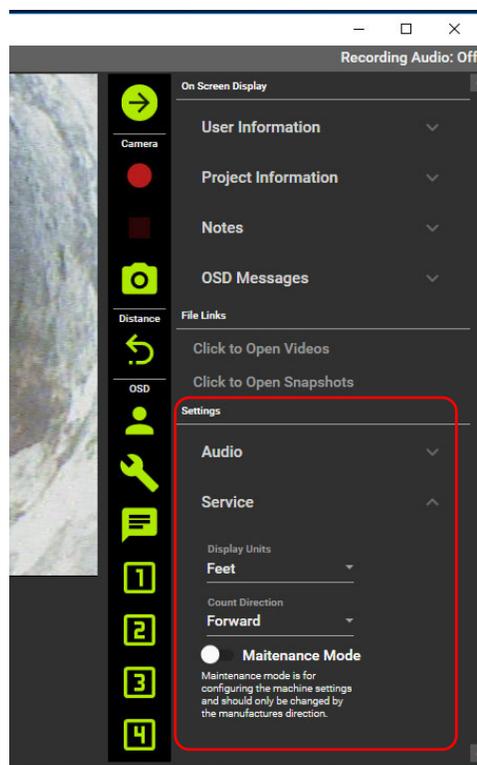
Settings
Service
- Display Units: Change on-screen distance counter between feet and meters.
- Count Direction: Change the direction of the on-screen distance counter between **Forward or Backward.**
- **Notice: Maintenance Mode is only used by the manufacturer or an authorized service center.**

WiFiAV-HD Inspection App

Your inspection system has an integrated wireless module built into the reel to stream live video to a smart phone or tablet. The live streaming application is supported by Apple and Android operating systems. With this app you can view, record and save both video and pictures on your mobile device.

Free to download, the WIFIAV-HD App is on the Apple Store for Apple devices, or the Google Play Store for Android devices. In the search section enter "WIFIAV-HD". Select the WIFIAV-HD app and download it to your device.
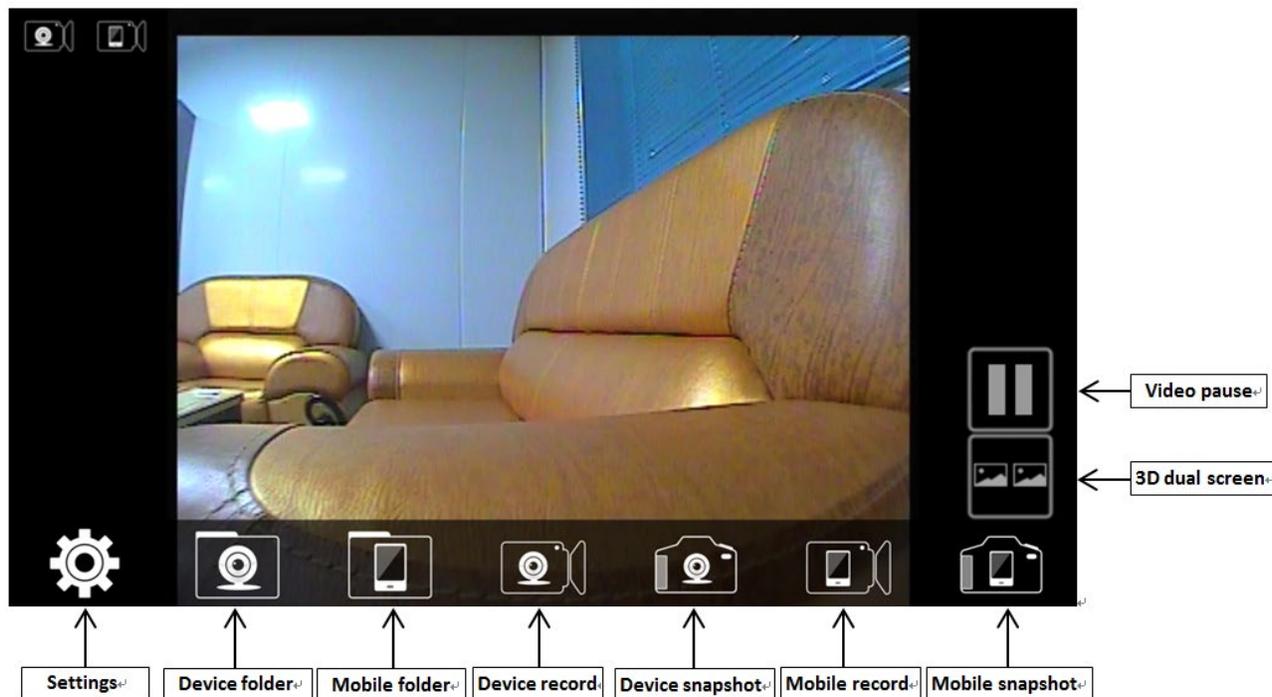
To operate wireless streaming from your inspection system, the unit must be powered on. **Step 1:** Download the "WIFIAV-HD" app from app store on the mobile device you want to use.
Step 2: Go to your WiFi settings on your mobile device and select or connect to the unit's WiFi network. If it is the first time your mobile device is connecting to the unit you will be prompted to enter a password. The password is "12345678" – Important: See notice below about passwords.

Step 3: Open the "WIFIAV-HD" app on your mobile device. The image from your inspection system should be showing on your mobile device through the "WIFIAV-HD" app. (Repeat step 2 if an image from your camera is not showing on your mobile device.)

Notice:
The default password is 12345678. It is not advised to change your SSID or password on the wireless module, there is no master reset if the SSID or password are changed and the password is forgotten. The system will have to be sent or brought to your nearest dealer for factory reset, not covered under warranty. (ONLY ONE DEVICE MAY BE CONNECTED TO THE APP AT A TIME)


Video pause
3D dual screen
Settings | Device folder | Mobile folder | Device record | Device snapshot | Mobile record | Mobile snapshot

Mobile App Controls

1. *Settings* Use with caution, changes to your **Wi-Fi SSID and PASSWORD**

   Once changes are made, do not lose your password or you will have to send in your camera system for

   a factory reset. ***Not Covered Under Warranty***

2. Device / mobile folder- accesses the folder on the device or mobile device, if available.

3. Device record / Device Snapshot- allows you to record or take a snapshot on the device.

4. Mobile record / Mobile Snapshot- allows you to record or take a snapshot from the mobile phone.

5. 3D dual screen- allows you to split the screen into two viewing areas.

6. Video pause- allows you to pause the current recording.
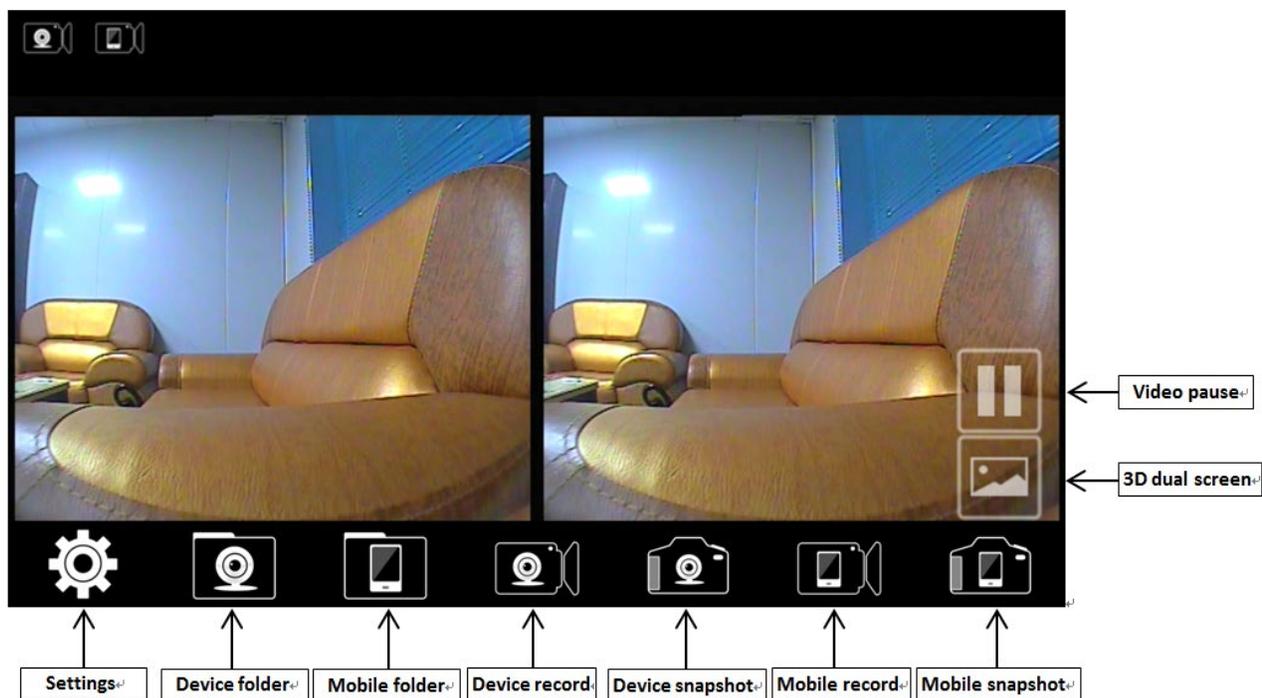
NOTICE:
If you are experiencing unusual background noise on your unit while using the WIFI app, adjust

your WIFI app device settings to channel 10, then restart your unit.

For more information on the Wifi App, please visit www.insightvisioncameras.com/literature/

Connecting a USB Headset to IRIS

Here is how to connect a USB headset to your IRIS so you can record audio over your inspection video. Note: This option may not work with 3rd party software. Please contact your 3rd party software vendor for further information.
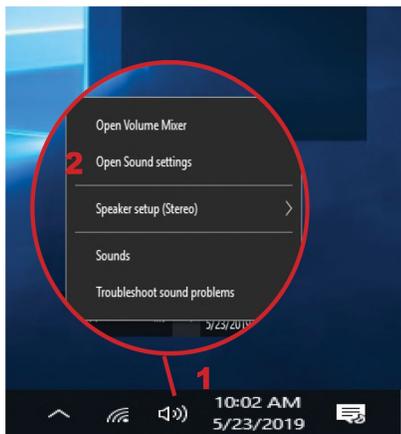
Plug USB Headset in to one of the USB Ports on the IRIS

1. Right Click (long press if using the touch screen) the 🔊 Speaker Icon on bottom right of screen.
2. Select "Open Sound Settings".
3. Select the USB Headset.
4. Click on the Microphone "Device Properties".
5. Click on "Additional device properties".
6. A window will open. Click on the "Listen" Tab.
7. In the dropdown menu labeled "Playback through this device" select "Speakers (High Defintion Audio Device)".
8. Select "Apply" in the lower right of the window
9. "X" out of the settings to go back to the home screen.
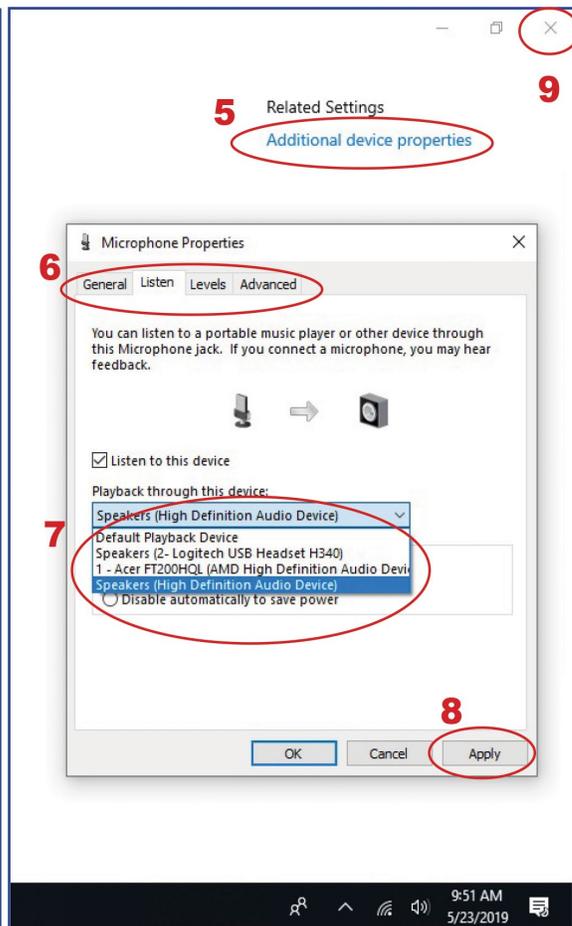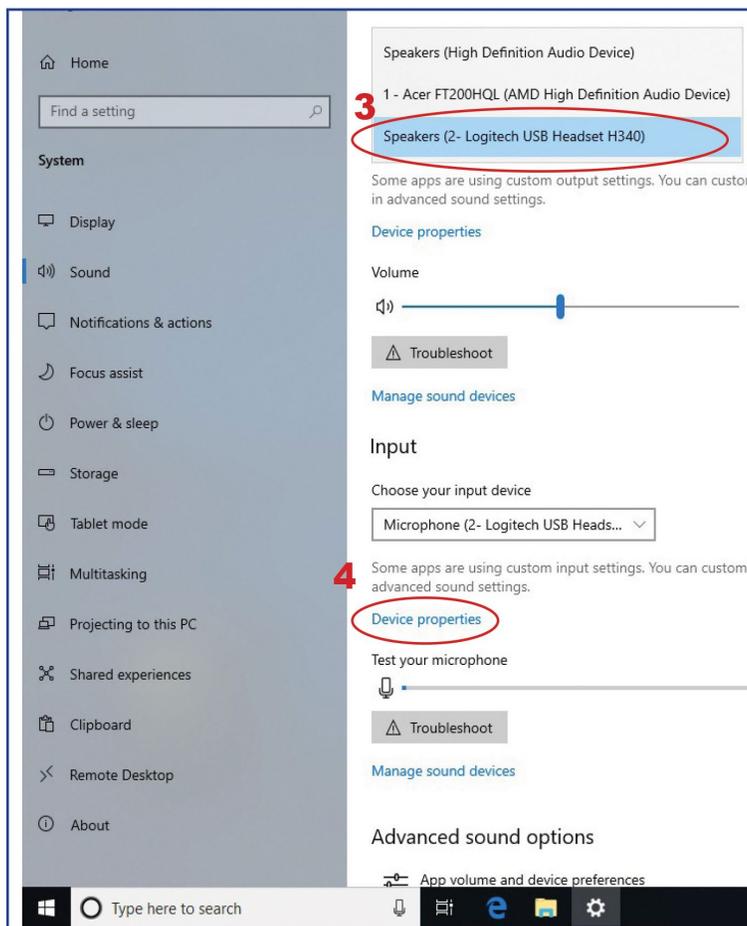
Specifications:

Transporter:

- Six-wheeled crawler with all-wheel drive
- Three available wheel sets for various pipe size ranges
- Pipe diameter 6" to 12" (Up to 18" with additional wheel set)
- High grip polymer tires for demanding conditions and terrain
- Leak/pressure test valve/port
- Hardened drive gears
- Easy/rapid wheel change with single retaining nut per wheel
- Weight of transporter is 35 lbs.
- Transporter dimensions is 19"L x 3.5"H x 5"W
- 9 LED lateral lights
- 4 Front LED lights

Motorized Cable Drum:

- Variable speed motorized reel rewind and payout
- Automatic freewheel drum clutch
- 600' Kevlar reinforced, Hertel coated cable
- Footage counter
- On-screen distance display in feet or meters
- Level wind system
- Reel weight is 150 lbs.
- Reel dimensions is 29"H x 20"W x 21"D
- Reel power 110 volts

Control Panel:

- 10.1" Daylight readable color high resolution LCD touchscreen
- Digital on-screen text enable with external HDMI port
- Wireless connectivity
- Interface includes wireless remote access Wi-Fi
- Operates on Windows™ 10
- External recordings to USB and SD

Camera Specs:

- 360 degree rotation
- 180 degree pan
- Fixed focus
- Height adjustable camera head with manual lift arm
- Impact resistant polycarbonate dome
- NTSC standard, PAL optional
- 640 x480 video resolution
- Hi-intensity LED's provides pipe illumination
- Camera sensitivity < 1 Lux

Back of the IRIS

Telescoping Handle

Additional Ports – Easily connect a TV, to the internet or additional USB

Sturdy Side Handles for Lifting

NETWORK   USB
VIDEO OUT   HDMI

Outlet, Power Switch & Cord

Non-Slip Wheels

Sturdy Handles – The IRIS weighs over 160 lbs so a minimum of two people should lift it using the handles on each side.

Telescoping Handle – To maneuver the IRIS, slide the Pin to the right and lift the Telescoping Handle until it clicks in place. Tilt the IRIS toward you and push or pull it where you want to go.

Power On/Off Switch – Plug in the AC power cord provided in to back of unit, plug the other end in to a 110V electrical outlet and Press power – on the back of the unit. Note: you will still need to press power on the IRIS control panel to turn the unit on. The A/C outlet is a power source for additional electrical equipment.

Additional Ports – Plug in a TV or Monitor into the HDMI port, keyboard/mouse in to the USB port, RCA Video Out Jack to a TV or Video In for…, and an Ethernet port for a network connection.

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Other Topics in Manual

Changing the Wheels

Crawler Body, Pressure Valve (testing?)

Camera – inspect wires,

Adjusting Height of Camera Head – Cam

Best Practices

Cleaning Cable as it is Reeling In

Crawler Maintenance

Reel Maintenance

Troubleshooting

Inspection Optimization – Resistance, Tires, Type of Pipe, Pipe Conditions, etc.

Lowering system in to Pipe

No No's

Strain Relief, Sun Shade, Rain Cover

Plugging in a TV, Mouse, Etc.

Termination?

Removing Bezel

Connecting to a Generator

Connecting to an Inverter

Team Viewer

Storing the unit

Changing between Apple/Android and Samsung phones

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Warranty:

Insight Vision warrants to the original purchaser that should any of its products prove to be defective in material or workmanship in normal use, within one **(1)** year from the date of delivery, Insight Vision will, at its exclusive option, repair, replace or exchange the product or any of its parts.

<u>THIS WARRANTY IS SUBJECT TO THE FOLLOWING LIMITATIONS:</u>

▪ The warranty does not apply to any product which has been subject to accident, negligence, alteration, abuse, misuse, overload, repair by anyone other than Insight Vision or its authorized representatives, or not maintained in accordance with the manufacturer's suggested maintenance requirements.

▪ The warranty applies only to components manufactured by Insight Vision. The appropriate manufacturer's warranty, if any, shall apply to components not manufactured by the company.

▪ The warranty does not apply to flex-link connectors, rod, LED light rings, cable, rollers, O-rings, and skids, or other parts, which are considered consumable. The replacement of these items is part of normal product maintenance.

▪ The warranty shall not apply if the products are used or operated in any manner not consistent with their intended purpose.

▪ The warranty is limited to repair or replacement of defective products and parts during the warranty period, and shall be the exclusive remedy. Insight Vision shall in no event have any other obligation or liability of any nature arising from the breakdown, malfunction, defect or other failure of the product, including, without limitation, any liability for service, maintenance, repairs, personal injury, property damage, loss of profits, loss of use or other consequential damages.

▪ Any action for any claimed breach of this warranty shall be brought within one (1) year from the date of delivery of the product.

▪ The purchaser must return the defective product, part or component to the Insight Vision factory in Saukville, WI 53080 at the purchaser's expense, properly and adequately packaged, with insurance and transportation pre-paid. Insight Vision will either repair or replace the defective product, part or component, at its option, and will return it to the purchaser at the customer's expense. In no event shall Insight Vision be liable for delay in repair or replacement and return under this warranty. Insight Vision will endeavor to effect appropriate repairs in the shortest time practical, with respect to the customer having beneficial use of their equipment.

▪ Insight Vision neither assumes nor authorizes any person to assume any other liability or make any other warranty in connection with the products.

THIS WARRANTY IS EXPRESSLY GIVEN IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED. INSIGHT VISION EXPRESSLY DISCLAIMS ANY OTHER WARRANTY, INCLUDING, WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

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