ITpipes Hardware Requirements

This document outlines hardware requirements to use ITpipes Mobile, Web, and Sync.

ITpipes Mobile

Here, you can find information on ITpipes Mobile features. It is important to **confirm the system meets requirements prior to the set up of ITpipes**, including the following:

1. **Special CCTV Camera Requirements** for specific systems or features
2. **Compatible Camera/Video Overlay** is used for communication between the camera and the software**.**
3. **Mapping Requirements**
4. **PC Requirements**
5. **Video Capture Card** for connecting video from the CCTV Camera to the computer.

Mobile: Special CCTV Camera Requirements

For ITpipes Mobile and *specific* CCTV cameras, there may be special requirements, as noted here:

- For **HD cameras,** the recommended hardware varies, please see the appropriate section below titled "HD Recording requirements".
- For **IP cameras**, the camera does need to be Onvif Compatible or have its own application.
- For **360 cameras**, the manufacturer typically provides an application that manages video display and capture inside ITpipes. In either situation, ITpipes does not need separate video capture hardware.
- For **IBAK Panoramo Camera and Panoramo Scanner**, or Soft Controls, requires that the Microsoft User that is logged in to have administrative permissions and ITpipes to be run in Windows Administrator mode.[1]
- For **IBAK Orpheus Cameras** that have an EDI with Soft Control and have measurement capability can use the ITpipes Mobile Measurement setup and subscription to access this function on the Ibak camera.
- For **IBAK Soft Controls** only the Sensoray or Vitec capture devices are compatible. Contact the local IBAK dealer for specific part numbers.
- If **GPS location awareness** is desired inside ITpipes Mobile, ITpipes recommends purchasing this device. *Updated 5/16/24*

[1] This is a requirement of the Ibak software. That software is required to use Ibak hardware. If you are using Ibak hardware, users will need administrative permissions to run ITpipes, as the Ibak software is within ITpipes.

Mobile: CCTV Camera - Video Overlay/Titler

Below, you will find a list of compatible CCTV Camera - Video Overlay/Titler Systems, options for if a non-compatible overlay system is in use, and details on connecting the computer to the video overlay system[1].

- Aries Industries VL3000*
- Aries Industries VL5000 (Saturn III)
- CUES K2 Summit
- CUES PDR 2K*[2]
- Decade Engineering XBOB-4E*
- IBAK EDE7[3]
- IBAK EDI[3]
- IBAK Panoramo
- IBAK Pano SI
- IBAK Mainlite
- IBAK Soft Control[3]
- iPEK DE03SW - WinCan America Overlay*
- iPEK DE07C*
- iPEK VC300
- iPEK VC500
- Pipetech PI - Black, Red & Blue[4]
- Rausch WKI*
- Rausch MiniCam
- Spering OSDcc*
- Spering OSDcck*

US Digital DAQ

If a hardware overlay is not compatible or available, ITpipes supports the use of a software controlled text overlay via a dedicated US Digital Data Acquisition Device[5] providing a linear distance reading. This allows the functionality of a hardware overlay and the flexibility and reliability of a cross-industry data acquisition standard.

- USB4 Data Acquisition Device
- Unterminated Cable necessary for connection to USB4

Serial Port Adapters

The majority of overlay hardware devices use serial port connections to the pc; these adapters are recommended when connecting a pc to a hardware overlay system.

- USB to Serial Adapter with LED Indicator Win 10, 8, 7, XP*
- USB to Serial Adapter*

Note: if using a USB option, we highly recommend using an adapter with an FTDI chipset!

[2] PDR2k only works with chipsets CUES TS035 and CUES TS036
[3] *Ibak Orpheus Cameras that have an EDI with Soft Control and have measurement capability can use the ITpipes Mobile Measurement set up and subscription to access this function on the Ibak camera.*
[4] Pipetech PI - The faceplate color determines the model of PI in use.
[5] Unsupported: The QSB device is not supported by ITpipes Mobile and for ITpipes Desktop can not be guaranteed to function due to the product not having drivers available for Windows 64 bit Operating Systems.

Mobile: Mapping Requirements

ESRI mapping products have experienced known issues with various Nvidia Quadro and AMD Radeon Pro video cards, see this ESRI link for more info. We recommend avoiding these cards.

Mobile: PC Requirements

For ITpipes Mobile, there are 3 computer options including Rackmount PC, Nuk, and Laptop.

ITpipes does have a recommended list of specific parts that can be purchased, on our Support Site, to build a Nuc or Rackmount PC "DIY" style. Here is the link. (requires a login to the ITpipes Support Site)

If recording in HD there are additional minimum requirements, shown below.

Rackmount PC **Requirements**	• Processor: Intel i7-7700 3.6Ghz Quad-Core, Minimum Intel i5-5575 3.1 Ghz Quad • Memory: 16GB DDR4 RAM (or higher), Minimum 8 GB DDR4 RAM • Hard Drives: 512GB+ SSD for Windows Operating System (OS) and 2TB+ 7200 RPM HDD media drive, Minimum 256 GB+ SSD for Windows Operating System (OS) and 1TB+ 7200 RPM HDD media drive • Windows 10 Pro 64 bit or Windows 11 64 bit OS • 21" Display with minimum 1920 x 1080 resolution • Dual displays if working with GIS or other software simultaneously with ITpipes; **ITpipes uses a large percentage of the CPU resources. If other apps are using those same resources, conflicts will arise. This specification also assumes multiple monitor displays are wired through the dedicated graphics card (GPU) for maximum processing throughput; monitor displays going through USB devices have caused known issues.** • NVIDIA 1050 Ti (or Higher), Minimum: Integrated Graphics Card [6] • All hardware such as monitors, cables, etc. must be 4k compatible if you are capturing 4k video from the camera system. • Video Capture Device, see section titled "Video Capture Devices". • Overlay/Titler Device for connection to the camera system. See section titled " CCTV Camera - Video Overlay/Titler". • Ethernet is recommended, Wifi is acceptable, broadband connectivity at minimum is required for installation, set up, updates, etc.

[6] Some graphic cards used with ESRI can have challenges with a redraw feature, ITpipes recommends confirming the graphic card is integrated. Any video card that starts with an "A" typically does not work with ESRI inside ITpipes Mobile (redraw feature), those are Quadro cards. Cards that typically work are numbered, such as 1060's, 3060's, etc.

Nuc PC **Warranty & Installation (see requirements below)**	Warranty and Installation: ● ITpipes recommends purchasing the warranty with this. ● ITpipes recommends purchasing two identical units. This provides a primary unit used day to day and a secondary unit. By having the units identical, one can be easily swapped out with the other. For installation, ITpipes recommends using the space where the previous industrial cased pc was located. By adding in a 19" rack/shelf, the Nuc can sit on the shelf and industrial velcro used to place the unit on the shelf. This keeps cables consistent with the industrial cased unit. The Nuc is so small and tight inside, ITpipes has not seen damage from vibration, etc. Cables do come loose with any pc in this environment, so having easy access in this location is great when cables need to be tightened or accessed. ITpipes recommends these Nuc systems due to the huge time savings and minimal effort to install especially when compared to the rack mount, industrial cased units, ease of swap-out, and cost.
Nuc PC **Requirements**	● Processor: 8th Generation Intel Core i7-8650U (1.9 GHz up to 4.2 GHz with Turbo Boost) ● Windows 10 Pro 64 bit or Windows 11 64 bit OS ● Memory: 16 GB DDR4 RAM (or higher), Minimum 8 GB DDR4 RAM ● Graphics: UHD minimum ● Hard Drive : 1 TB Solid State Drive (SSD), PCIe-NVMe OPAL2.0 M.2 ● 18in display (minimum) and dual display ● Three or more USB ports or a powered USB port adaptor similar to this USB-C to USB Hub. ● Video Capture Device, see section titled “Video Capture Devices”. ● Overlay/Titler Device for connection to the camera system. See section titled “ CCTV Camera - Video Overlay/Titler”. ● Ethernet is recommended, Wifi is acceptable, broadband connectivity at minimum is required for installation, set up, updates, etc.

Laptop **Warranty & Resources (see requirements below)**	Warranty and Resources: ITpipes uses a large percentage of the CPU resources. If other apps are using those same resources, conflicts will arise. This specification also assumes multiple monitor displays are wired through the dedicated graphics card (GPU) for maximum processing throughput; monitor displays going through USB devices have caused known issues.

	We do recommend any optional warranty for on-site service if using this laptop in the field!
Requirements	• Processor: 8th Generation Intel Core i7-8650U (1.9 GHz up to 4.2 GHz with Turbo Boost) • Windows 10 Pro 64 bit or Windows 11 64 bit OS • Memory: 16 GB DDR4 RAM (or higher), Minimum 8 GB DDR4 RAM • Graphics: Integrated Graphics Card [7] • Hard Drive : 1 TB Solid State Drive (SSD), PCIe-NVMe OPAL2.0 M.2 • 15.6in display (minimum) and a second 18" minimum external monitor • Three or more USB ports or a powered USB port adaptor similar to this USB-C to USB Hub. • Video Capture Device, see section titled "Video Capture Devices". • Overlay/Titler Device for connection to the camera system. See section titled " CCTV Camera - Video Overlay/Titler". • Ethernet is recommended, Wifi is acceptable, broadband connectivity at minimum is required for installation, set up, updates, etc. We do have a recommended laptop for purchase, link here or here (these links often expire, please contact techsupport@itpipes.com if they are non-functional). These laptops cycle regularly and we check this monthly, however, if this link is not active, please email techsupport@itpipes.com and we will update this asap. To extend the USB capabilities of the recommended laptop for purchase, we recommend adding a USB-C Hub

HD Recording Requirements	• Processor: Intel i7-7700 3.6Ghz Quad-Core, Minimum Intel i5-5575 3.1 Ghz Quad • Memory: 16GB + DDR4 RAM (or higher) • Hard Drives: 512GB+ SSD for Windows Operating System (OS) and 2TB+ 7200 RPM HDD media drive, Minimum 256 GB+ SSD for Windows Operating System (OS) and 1TB+ 7200 RPM HDD media drive • Windows 10 Pro 64 bit or Windows 11 64 bit OS • Dual displays, if working with GIS or other software simultaneously with ITpipes; **ITpipes uses a large percentage of the CPU resources. If other apps are using those same resources, conflicts will arise. This specification also assumes multiple monitor displays are wired through the dedicated**

[7] Some graphic cards used with ESRI can have challenges with a redraw feature, ITpipes recommends confirming the graphic card is integrated. Any video card that starts with an "A" typically does not work with ESRI inside ITpipes Mobile (redraw feature), those are Quadro cards. Cards that typically work are numbered, such as 1060's, 3060's, etc.

	graphics card (GPU) for maximum processing throughput; monitor displays going through USB devices have caused known issues. ● HD Camera (verify with camera manufacturer) ● 21″ Monitor with 1920 x 1080 resolution (minimum) ● NVIDIA 1050 Ti (or Higher) ● All hardware, such as monitors, cables, etc. must be *HD compatible.* ● Three or more USB ports or a powered USB port adaptor similar to this USB-C to USB Hub. ● HD Video Capture Device, see section titled "Video Capture Devices" and HD device listed. ● Overlay/Titler Device for connection to the camera system. See section titled " CCTV Camera - Video Overlay/Titler". ● Wi-fi is recommended, Broadband connectivity at minimum is required for installation, set up, updates, etc. If using a laptop: ● Laptop Monitor with 1920 x 1080 resolution (minimum)** ● Dedicated graphics card required (For example, Intel HD XXXX is not a dedicated graphics card) ● Video Capture Device.

Mobile: Video Capture Devices

USB	StarTech Composite to USB Capture* Dazzle DVD Recorder* *These Capture devices are compatible with IBAK SD camera systems not using the IBAK Soft Controls. They are not compatible with IBAK HD systems. *Unsupported in ITpipes mobile Avermedia C039, (20230113-due to no current drivers)* *Unsupported in ITpipes Mobile: Kworld 2860/2800D, USB2800 DVD Maker* *Unsupported in ITpipes Mobile & Desktop: Hauppauge USB Capture Devices*
HD Video	Plugable HDMI Video Capture Card* StarTech HDMI Video Capture Device*[2] *All HD recording devices listed require a SDI to HDMI converter. The SDI to HDMI Converter is required. [2] Is compatible with IBAK HD Camera systems that are not using IBAK Soft Control.
Internal Video Capture Devices	Avermedia Live Gamer 2*[2] Note: Internal cards do require a converter to go from either RCA to HDMI (Standard Definition up to 640 x 480) or SDI to HDMI (High Definition up to 1280 x 720).

	*All HD recording devices require an SDI to HDMI converter. The SDI to HDMI Converter is required. [2] Is compatible with IBAK HD Camera systems that are **not** using IBAK Soft Control.

ITpipes Web

Workstation Requirements	• Google Chrome or Firefox Mozilla • Internet or network connection Note: Internet Explorer is not supported.
Server Requirements	• Web server running a 64-bit edition of Windows 10/Server 2012 or newer with IIS Features and management tools installed • SQL Server version 2012 or newer (can be the same server as above). • Java Runtime Environment 1.8 or newer for license server. Must be matched to OS bit type x64 (can be the same server as above). • Media storage server with a shared directory to store files (can be same server as above) • 1 CPU/2 Cores, minimum 1 Core • 6 GB Ram recommended, minimum 2 GB of ram • 120 GB Storage recommended, minimum 60 GB Storage (Not for Media storage)

ITpipes Sync Host & Client

ITpipes Host Service - Server Requirements	• Microsoft SQL Server 2012 or higher • Windows Server 2012 or higher Note: ITpipes Sync requires that ITpipes Host be either installed on the same computer, or if on a domain, on a centralized server.
ITSync Client Requirements	• Windows* 64-bit OS 10 or 11 • PC meeting the requirements above **Microsoft ended support for Windows 7 January of 2020* **Microsoft ended support for Windows 8 & 8.1 January of 2023* **Microsoft is planning to end support of Windows 10 on Oct 14, 2025.*