THE WORLD'S FIRST **AUDIO DIODE** PREVENTS LEAKAGE Through AUDIO PERIPHERALS

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The Threats of Using Audio Peripherals

Peripheral audio devices such as headphones, speakers, and microphones can be easily hacked and transformed into a listening device, through which attackers can:

- Listen in to surrounding classified conversations in secure rooms
- Transfer data from secured to unsecured networks

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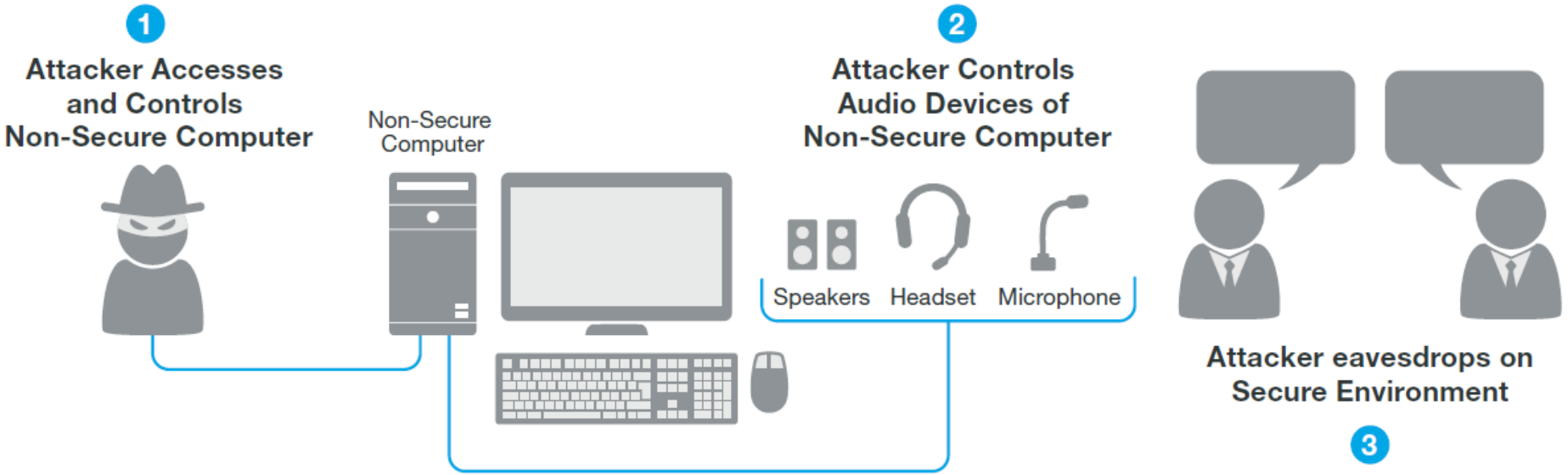
Leakage of a Secure Conversation

Eavesdropping through an unsecured network's audio devices

- Any speaker can be easily converted to a microphone by an attacker's malicious software
- With proper audio driver modifications, this small signal can be amplified and filtered to pick up surrounding conversations.



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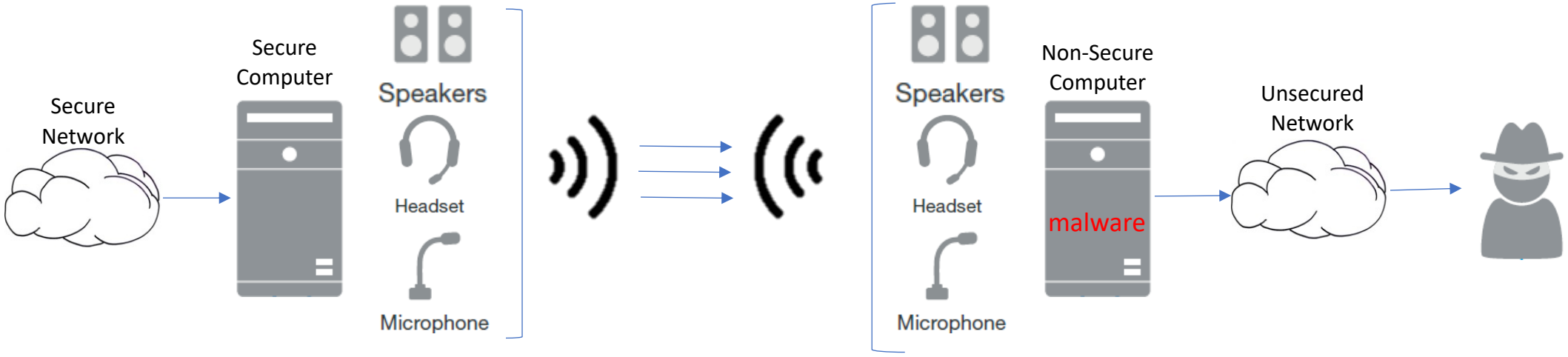
Leakage of Secure Data

Implanting or capturing data from a PC

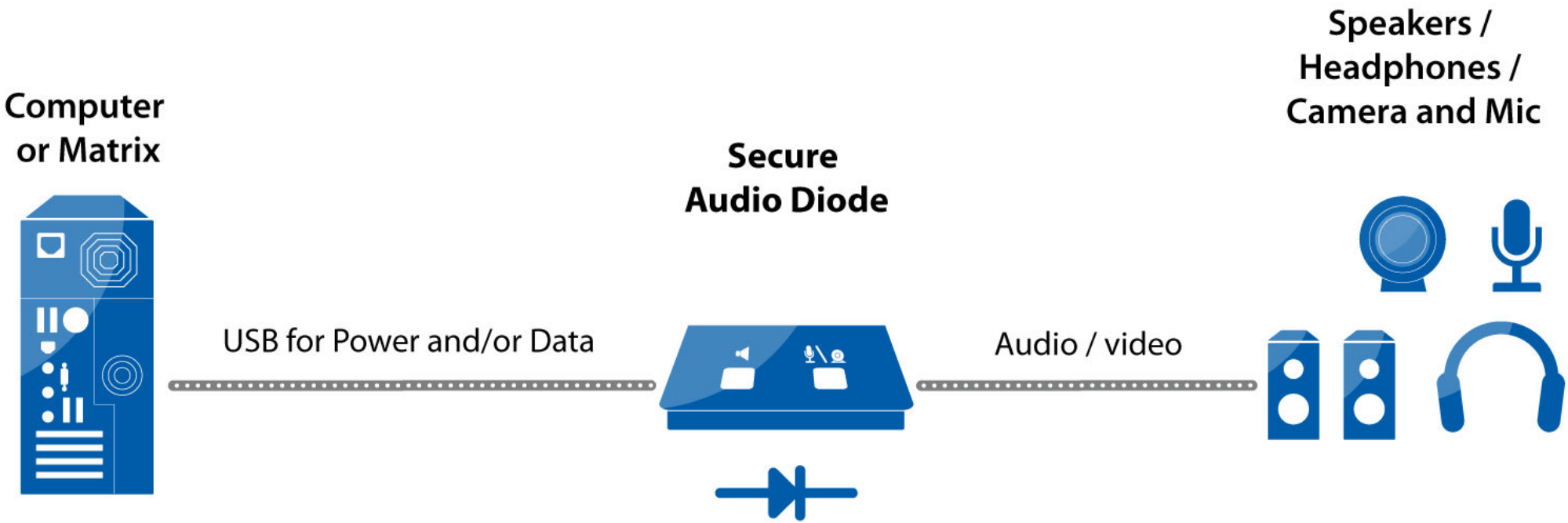
Attackers can transfer data from secured to unsecured networks by broadcasting high-frequency signals from an external hacking device

For example, data leakage through acoustic ultrasonic transmission



HSL's New Audio Diode Family

- The Audio Diode mitigates the risks of using peripheral audio devices in organizations with multiple isolated networks.
- The device connects between a source PC and a peripheral audio device (speaker/headphone or microphone) and prevents attackers from exploiting audio data-leakage exposure.



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How Does it work?

- **Unidirectional Audio Flow**
  HSL's Audio Diode ensures unidirectional audio flow from source to destination (speaker) preventing eavesdropping by a remote attacker.
- **Low-Pass Filter**
  All sounds passing through the Audio Diode go through a low-pass filter that restricts the audio frequencies to the range compatible only with the human ear.
- **Push-Button Control**

  Push buttons to activate the speaker/headphone and microphone manually.
  Certain models enable setting when and for how long to activate the audio channel

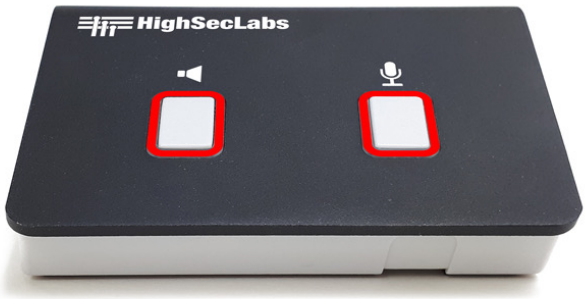
Models with Buttons

The Audio Diode has push buttons (one - Audio, or two - Audio and Mic)
that allows basic control of the diode:

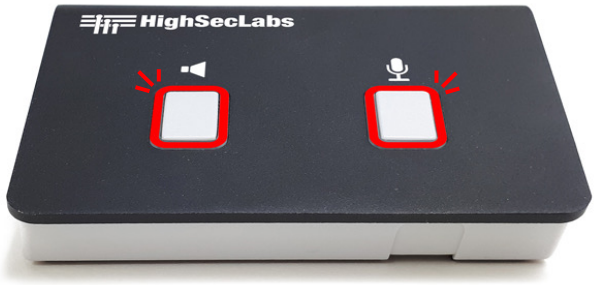
1. By default audio peripherals are disconnected and buttons are illuminated **green**.
2. Short/Double press on a closed interface will open it for several minutes.
   Solid **red** light indicates a Non-Secure/Open diode state.
3. Short/Double press on an open interface will close it on demand.
   Solid **green** light indicates a Secure/Closed diode state.
4. About a minute before turning off the Speakers/Mic, the button light will start flickering **red**, indicating it's about to turn off.
5. Long press on an open interface will extend it for a few minutes again.

1 – Secure/Safe to Talk

2 – Not Secure/Speaker & Mic Open



4 - About to Close



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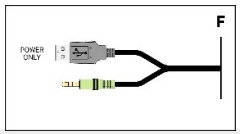
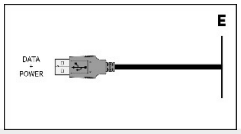
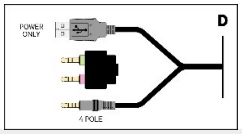
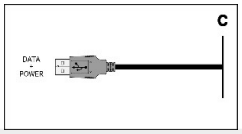
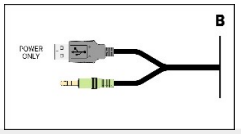
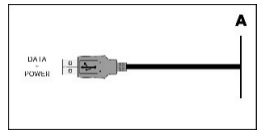
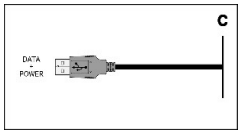
Products Table

Model	FA10AO-4	FA10BO-4	FA10AM-4	FA10BM-4	FA10A-4	FA10B-4	FA10BC-4
Description	Analog to analog always open no mic, no anti-tamper (AT)	USB to analog always open no mic, no AT	Analog to analog with mic support	USB to analog with mic support	Analog to analog no mic support	USB to analog no mic support	USB to analog with mic & digital camera support
Host Cable							
Input Interface	Analog	USB	Analog	USB	Analog	USB	USB
Output Interface	Analog	Analog	Analog	Analog	Analog	Analog	Analog
Speaker Button	-	-	Yes	Yes	Yes	Yes	Yes
Mic Button	-	-	Yes	Yes	-	-	Yes
Camera	-	-	-	-	-	-	Yes

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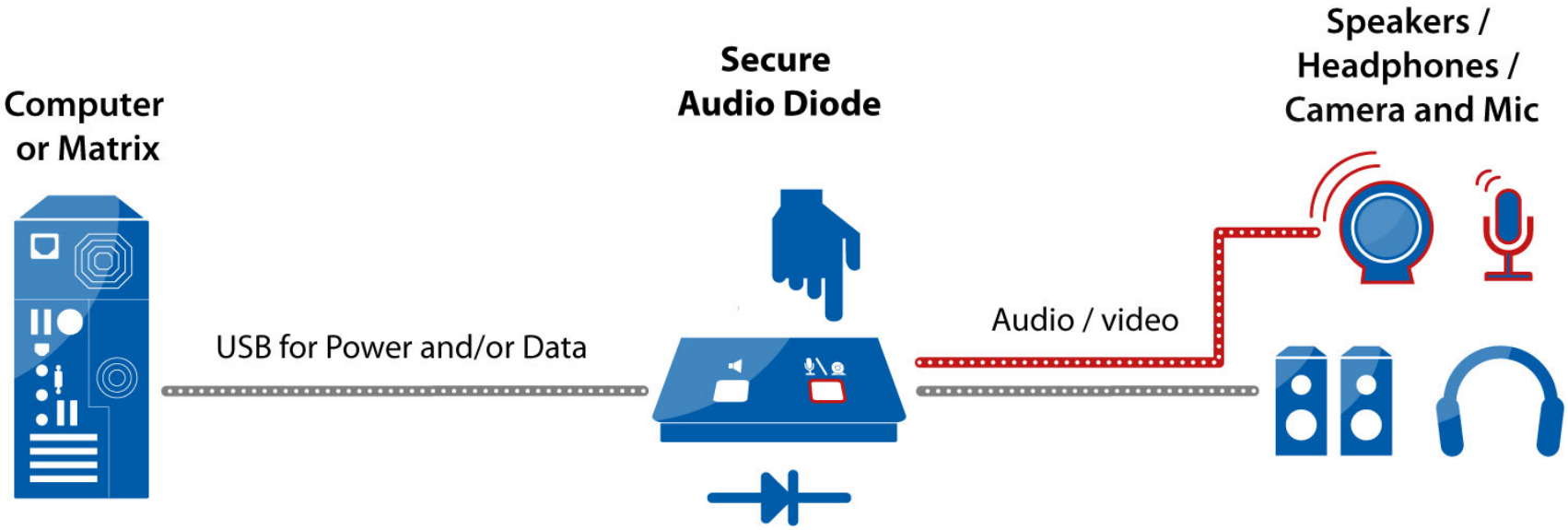
Audio Diode Models - FA10BC-4

Web Camera Support Secure Audio Diode - FA10BC-4

- Securely enables camera session with microphone and audio for a limited timeframe when the Camera/Mic button is pressed.
- Separately open/close audio session with a speaker button



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Audio Diode Models

FA10AM-4

FA10A-4

FA10AO-4

FA10BM-4

FA10B-4

FA10BO-4

FA10BC-4

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Highlights Summary

Feature	Benefit
Audio Diode	Blocks listening in to surrounding conversations
Low-pass filter	Blocks high-frequency signal attacks.
Small size	Takes up almost no room on the desktop
Easy to install and operate	Quickly connects to the host PC
Push Button Control	Users only need to click on the push button(s) to activate
Configuration Tool	Sets how long the speaker or mic remains open
Independent Speaker and Mic support	The user decides which peripheral device to use and when

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