

UNCLASSIFIED

THE WORLD'S MOST SECURE MEDIA DIODES

Prevent Data Leaks Through
Media Peripherals

HDC19354 Rev D



 **HighSecLabs**
Highest Security Solutions ●●●

THE THREATS OF USING MEDIA PERIPHERALS

Peripheral media devices such as headphones, speakers, microphones, webcams and videobars can be compromised by attackers to:

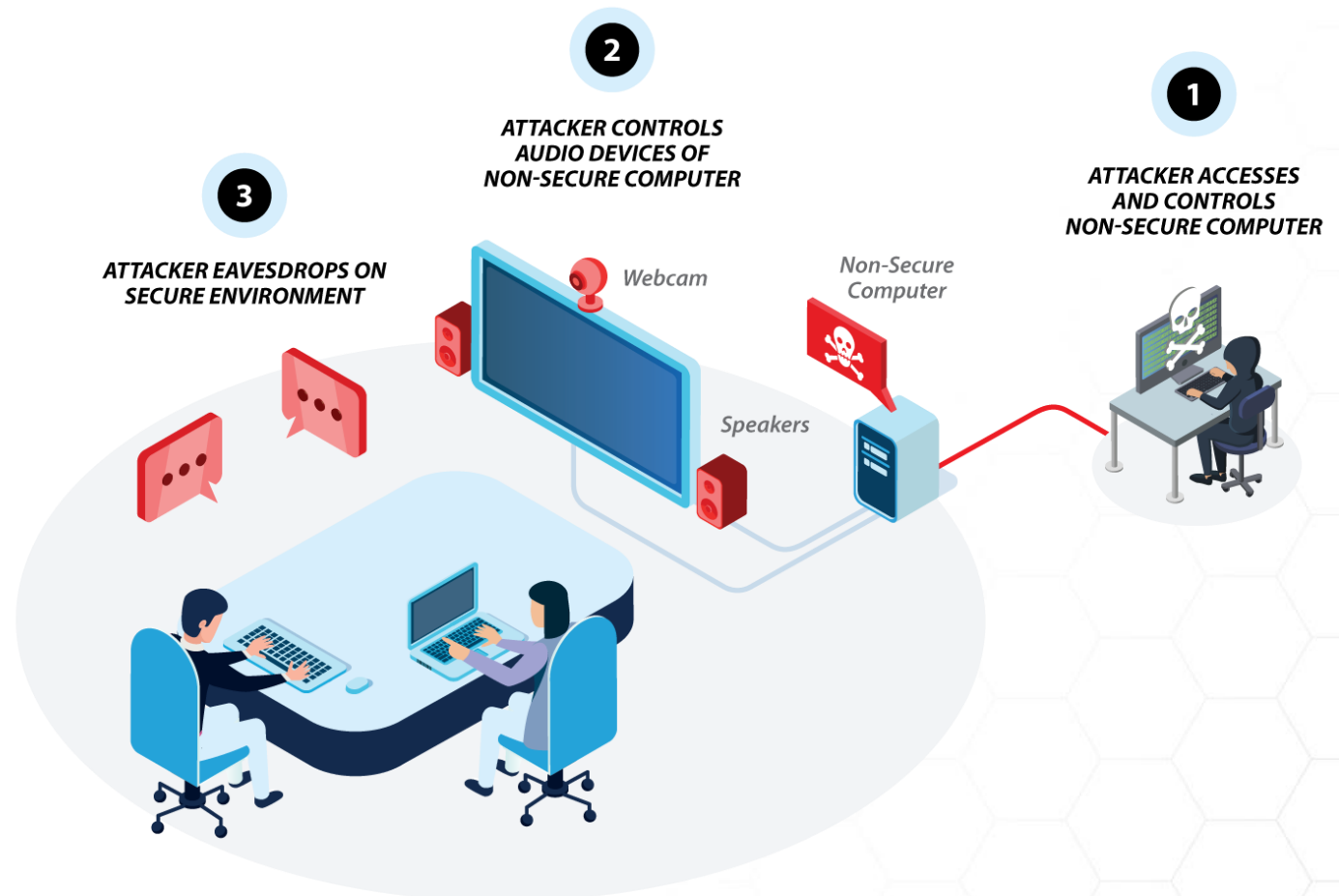
- Listen in to surrounding classified conversations in secure rooms
- Transfer data from secured to unsecured networks



LEAKING SECURE CONVERSATIONS

Eavesdropping through media devices on an unsecured network

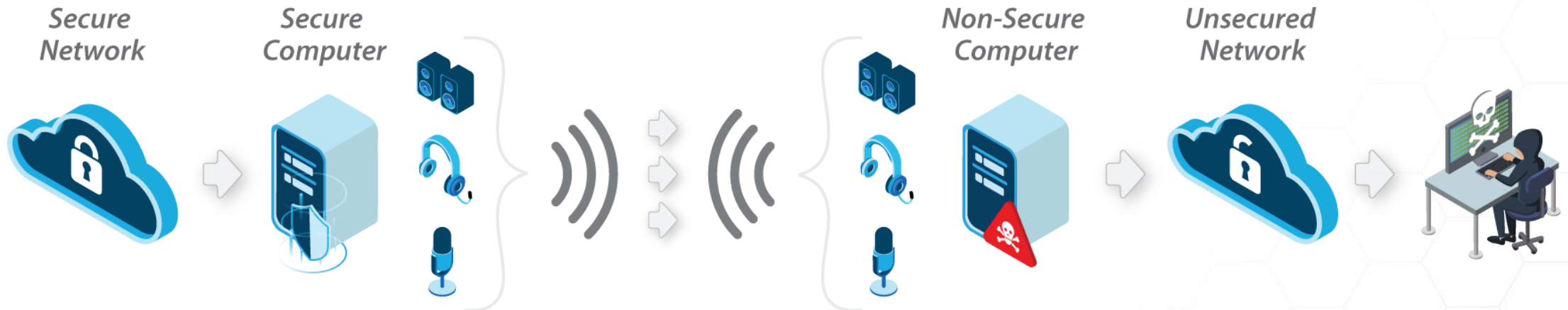
- Speakers can be converted into microphones by attackers in order to listen in on sensitive discussions.
- By modifying specific audio drivers, even weak signals can be amplified to filtered to listen in on surrounding conversations.



SECURE DATA LEAKAGE

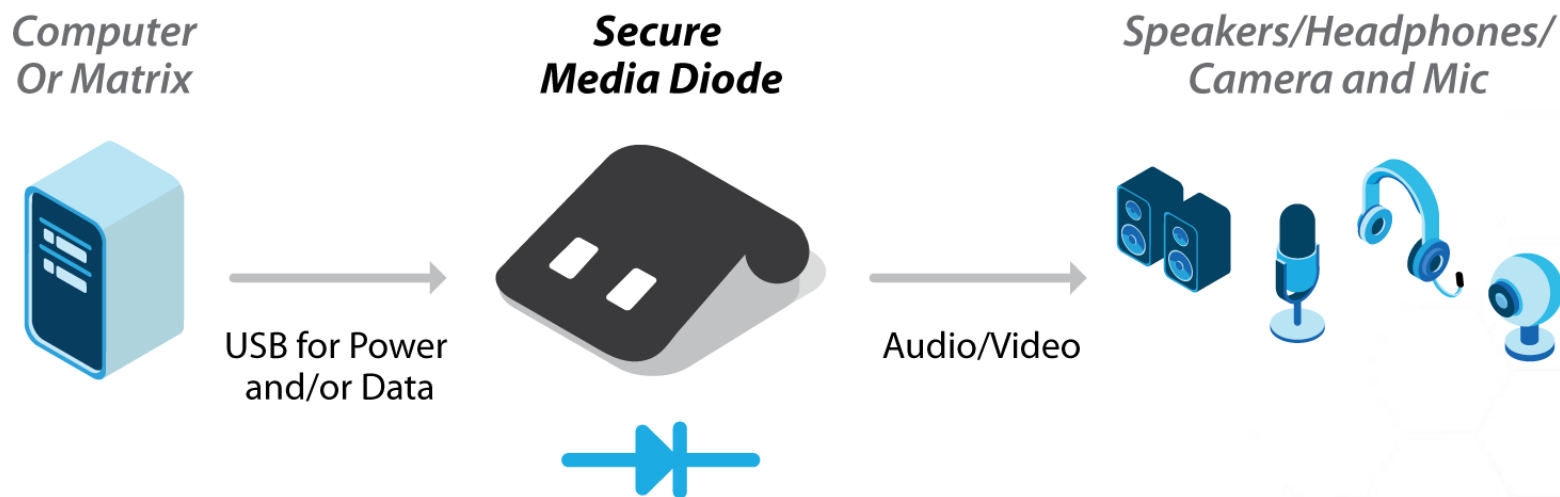
Data extraction from a secure computer

- Attackers can extract data from secured computers to unsecured networks or devices by using a secure computer's audio peripherals to broadcast high-frequency signals.
- Learn more on Acoustic ultrasonic transmission.



HSL'S MEDIA DIODE FAMILY

- Media diodes mitigate the risk of peripheral media devices being compromised in organizations with multiple isolated networks.
- A media diode serves as an invisible barrier between a host computer and the peripheral media devices (speakers/headphones/microphone/camera). It prevents attackers from exploiting vulnerabilities.



HOW DOES IT WORK?

- **Unidirectional Audio Flow**

HSL's Media Diodes enforce a unidirectional audio flow from the host computer to the media device, preventing eavesdropping by a remote attacker.

- **Low-Pass Filter**

All sounds passing through the Media Diode go through a low-pass filter that restricts the audio frequencies to the range compatible with the human ear, blocking high frequency data transmissions.

- **Push-Button Control**

Some Media Diodes are activated using a push-button. By pushing the activation button, the media diode enables data to flow between the host computer and the media device for a set time periods, disabling the connection at the end. Some Media Diodes enable session durations customization.

MODELS WITH BUTTONS

Media Diodes are enabled/disabled using push buttons and are illuminated to indicate their status.

1. Media peripherals are disconnected by default. This status is indicated by a **green** light around the push-buttons.
2. A short double-tap will enable the media diode for a set duration and change the status light to **red** to indicate the diode is open, in a non-secure state.
3. To disable the Media Diode, double tap the push button. This will close the diode, and the status indicating light will switch back to **green**.
4. An active Media Diode will signal the user about a minute and a half before it reverts back to its disabled state.
5. To extend the active status duration, press the blinking **red** button until it becomes a solid red.

1 - Secure/Safe to Talk



2 - Not Secure/Speaker & Mic Open



4 - About to Close

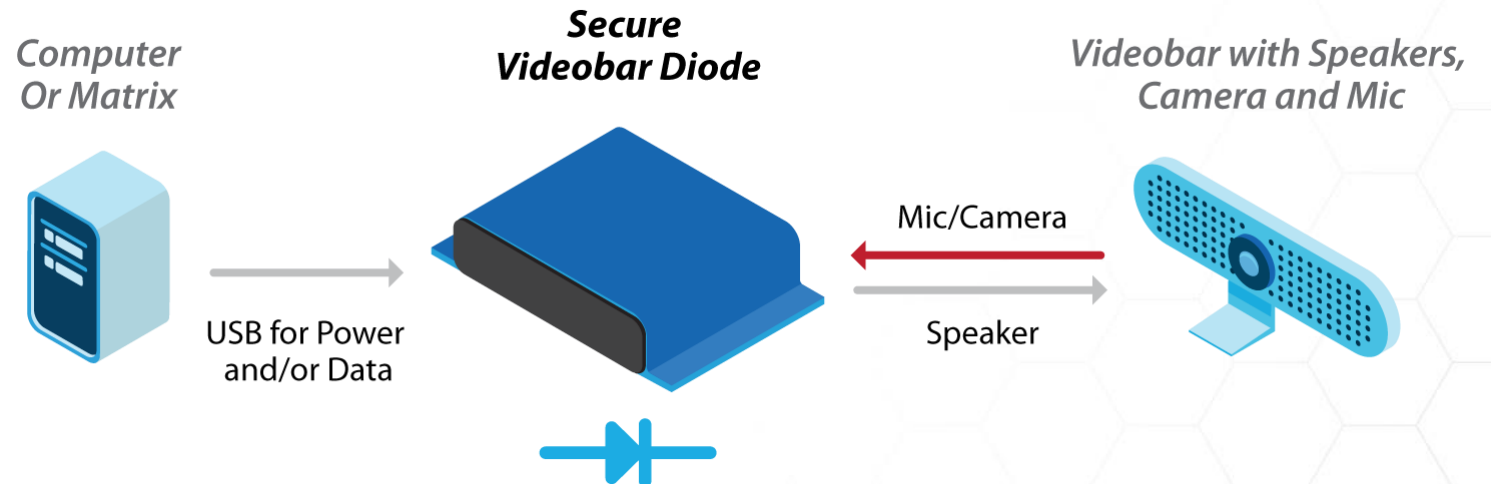


PRODUCT TABLE

Model	FA10AO-4	FA10BO-4	FA10AM-4	FA10BM-4	FA10A-4	FA10B-4	FA10BC-4	FS11USB2	FA10BB-4	FCA10BB
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	Videobar diode, USB to USB with digital audio (speakers and mic) & video support	USB to USB with mic and headset support	USB to USB with webcam support
Host Cable	Analog	USB	Analog	USB	Analog	USB	USB	USB	USB	USB
Input Interface	Analog	USB	Analog	USB	Analog	USB	USB	USB	USB	USB
Output Interface	Analog	Analog	Analog	Analog	Analog	Analog	Analog	USB	USB	USB
Speaker Button	-	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-
Mic Button	-	-	Yes	Yes	-	-	Yes	Yes (with camera)	Yes	-
Camera	-	-	-	-	-	-	Yes	Yes	-	Yes

VIDEOBAR SECURE DIODE FS11USB2

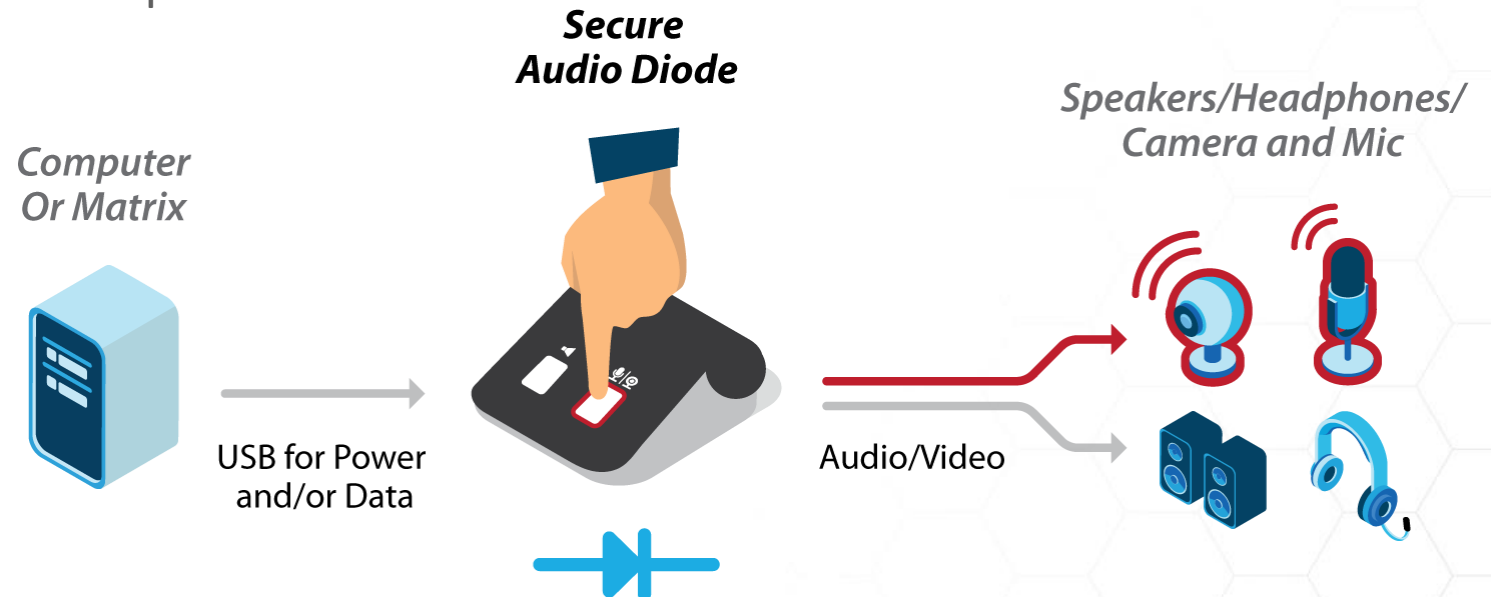
- Enables a conferencing videobar to be connected securely to any connected host device.
- Microphone/camera and speakers can be controlled individually.
- The Media Diode separates media streams (mic, camera and speakers) and enforces a unidirectional data flow to prevent data leaks.
- Audio streams pass through a low-pass filter, preventing data leaks through high frequency transmissions.



MEDIA DIODE MODELS – FA10BC-4

SECURE MEDIA DIODE WITH WEBCAM SUPPORT - FA10BC-4

- Secure video conference calls are enabled for a limited duration by pressing the push-buttons.
- Media input and output channels have separate activation buttons.



MEDIA DIODE MODELS



FA10AM-4



FA10A-4



FA10AO-4



FA10BM-4



FA10B-4



FA10BO-4



FA10BB-4



FA10BC-4



FS11USB2

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	User clicks on the push button(s) to activate media stream(s)
Configuration Tool	Sets how long the speaker or mic/camera remains open
Independent Speaker and Mic/Camera Support	The user decides which peripheral device to use and when

Thank You

For more info:



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