1. **Illustration of Invention:**

1.1 **Purpose**

The invention is a secret spy tool hidden as a normal USB stick. It does these things:

• Records key presses from a computer using USB

• Saves these logs safely in a small SD card

• Sends the stored data secretly over the TOR network using the computer's internet

• Spots any checks on it by watching power changes, USB oddities, and current draw changes

• Destroys both the data card and control chips via a small transformer, making sure no important info is left

1.2 **Technical Workings**

When plugged in (best on Windows), the tool:

• Acts like a normal USB storage device to avoid being seen

• Starts logging keys in the background using USB

• Connects to the TOR network sometimes using the computer's internet and sends out logs and other data

• Always watches the power and USB flow for clues of checks

• If it sees meddling or strange things, it sends a high-voltage pulse through a small transformer, wrecking itself forever

1.3 **Internet of Things (IoT) Integration**

The ESP32-WROOM-32 works mainly in secret but has tiny IoT features:

• Keeps hidden WiFi operations

• Sends system pings through safe TOR pathways

• Can be shut off or turned on remotely with pre-set safe codes

1.4 **Other Relevant Factors**

• The build aims to be tiny, looking like regular USB sticks

• Keeping data safe matters most: logs are locked before saving or sending

• Two-step check stops accidental self-wreck unless clear signs of checks are seen

1.5 **Unique Attributes**

• Secret physical hide.

• Smart self-wreck triggered by active checks

• Safe file sending over the TOR network using taken internet

• Locked storage and sending to stop data leaks even when it works normally

1.6 **Conclusion**

This tool is a top-notch device for secret data gathering and keeping in risky spots. It works unseen and ensures data destruction when a threat is found, making it better than normal keyloggers and spy tools.

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2. **DESCRIPTION OF THE DEVICE:**

2.1 **Purpose**

The device is a secret tool. It can take private data and type logs from a computer. It looks like a normal USB drive. Its main goals are:

• Collecting private things like passwords and files quietly.

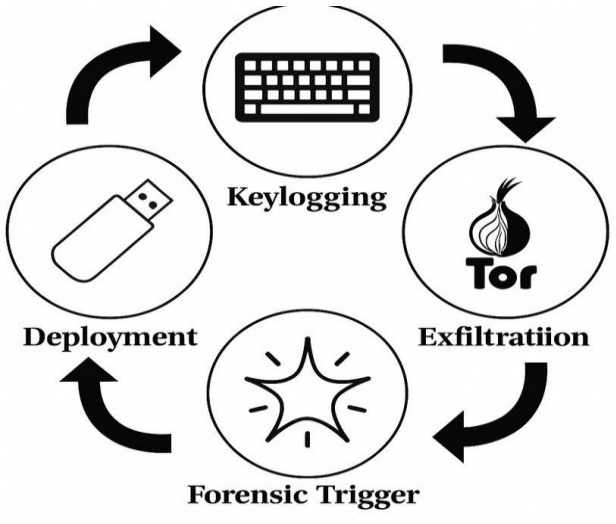
• Sending data with the host's internet using TOR to stay hidden.

• Destroying itself if found, so no one can recover data.

• Looking like a simple flash drive to avoid suspicion.

This device is good for tough digital places, spying on companies, or government missions where hiding is important.

2.2 **How It Works**



2.2.1 **Hardware**

• ESP32-WROOM-32 Microcontroller: Runs the device, handles data, WiFi, and self-destruction

• Micro SD Card (32 GB): Acts as storage for user and hides the captured data

• USB Interface: Provides power (5V), data, and injects itself into the system

• Self-Destruction Module: Uses a transformer and other parts to destroy itself when needed

2.2.2 **Firmware**

• Keylogging: The ESP32 captures typed keys on Windows using HID

• Data Storage: Saves data encrypted on the SD card's hidden part

• Anonymized Transfer: Connects to the internet and sends data over TOR

• Detection Mechanism:

  o Watches for voltage changes (USB sniffers)

  o Checks for odd USB activities

  o Monitors power use for strange behavior

• Self-Destruction: If detected:

  o The transformer kicks in

  o High voltage destroys memory and electronics

2.3 **IoT Integration**

The ESP32 can:

• Use WiFi in stealth to check-in with servers

• Get updates and commands securely

• Connect to a private TOR-based cloud for control

• Have a remote kill switch to destroy data fast

The device thus joins a network of spy tools, controlled remotely.

2.4 **Extra Points**

2.4.1 **Cross-Platform**

• Starts with Windows but can be adapted to Linux and macOS

2.4.2 **Self-Learning (Future)**

• Could use AI to spot forensic checks from live USB data

2.4.3 **Power and Monitoring**

• Dual power modes: normal use draws low, mixed power, sensing danger makes it draw high power for destruction

2.4.4 **Stealth**

• Passive: Appears as a cheap slow flash drive.

• Active: Uses fake scripts or decoy files to avoid suspicion.

2.5 **Unique Features**

Feature Description

Self-Destruction on Detection Uses surges to kill hardware

Host Internet Exploitation Uses victim's internet to connect over TOR

HID Emulation Captures keystrokes without software

Real USB Drive Works as a normal flash drive

Multi-Channel Monitoring Monitors voltage, current, and USB for forensic analysis

Remote Command IoT-enabled for managing actions

TOR-Based Anonymity Sends data through TOR for hiding

Encrypted Storage Saves data encrypted in hidden parts

2.6 **Conclusion**

This device blends stealth, hidden online actions, and irreversible self-destruction to make a top-notch spy tool. It's useful for secret info gathering or business spying, and is a big step up from current keyloggers and data thieves.

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3. **INTERNET OF THINGS (IoT) INTEGRATION:**

3.1 **Talking to Host System**

The device uses the ESP32's WiFi module, not as usual. It tricks the host PC (Windows OS) by USB HID imitation to:

• Make the host open secret TOR connections

• Insert scripts using Windows tools (like curl, wget, or PowerShell) to sneak data out

• Take over browser sessions or background services already linked to set up communication

This way, no new network device shows up in IT tools, keeping it hidden

3.2 **Secret Data Transfer**

The main way to sneak data out is TOR through Host Internet. Important points:

• No direct link between ESP32 and internet routers, hiding the device

• It uses Onion services to send logs to a hidden server

• All data is encrypted, keeping it unreadable even if caught by network sniffers

Communications seem like regular encrypted traffic from the host system

3.3 **Standalone IoT Action**

The device shows smart responses expected from an IoT system:

• Works Alone: Needs no human help once started.

• Event-Based Actions: Reacts to changes like voltage shifts, new requests, or power use changes.

• Safety Plans: If it can't sneak data out after many tries, it can destroy itself or try again later.

3.4 **Security and Backup**

With its big task, the device uses many security layers:

• Triple AES Encryption: Data is locked at capture, stored, and during send-off.

• Backup Storage: If data sneaking fails, important data is copied to other parts of the SD card.

• Time-Based Self-Destruct: Can be set to destroy itself if offline for too long (e.g., 72 hours).

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4. **EXTRA RELEVANT POINTS:**

4.1 **Forensic Hiding**

• No New Drivers: Uses usual HID and Mass Storage classes, avoiding suspicious drivers.

• No Lights or Sounds: Works quietly, with no status lights or sounds.

• Low Power Use: Uses power like a typical flash drive to avoid being noticed on checked USB ports.

4.2 **Power Use**

• Saves Energy: ESP32 sleeps until the host is idle or unlocked.

• Controlled Power Surge: Only uses more power when self-destruct is triggered, avoiding early detection.

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5. **UNIQUE ATTRIBUTES:**

5.1 **Dual Roles**

• Seen by People: Looks like a normal, safe 32GB flash drive.

• Smart Device: A hidden cyber weapon doing its job beneath the surface.

5.2 **Smart Self-Destruct**

• Uses both setting triggers (USB signal changes) and remote commands to up chances of destroying itself before getting caught.

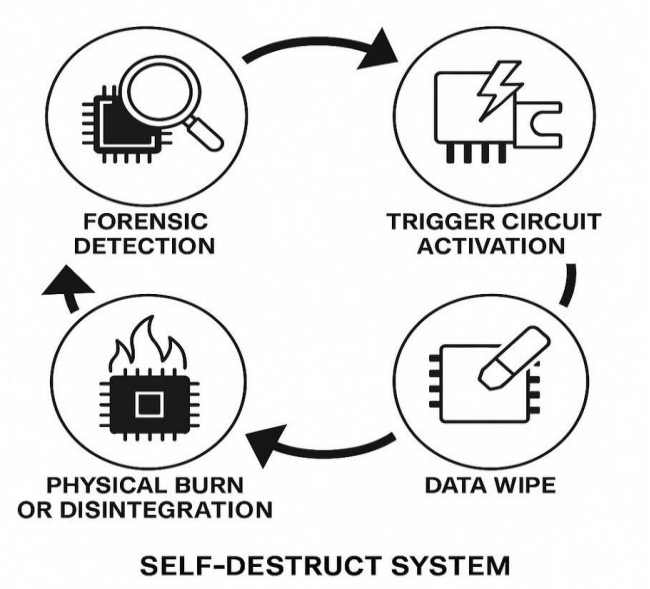
5.3 **Relies on Host Internet**

• Only uses the host machine's internet connection to avoid radio signals that could show it's there.

5.4 **Ultra-Hidden HID Insertions**

• Quick Keyboard Imitation: Sends keystrokes quicker than a person can type, reducing exposure time.

5.5 **Self – Destruct System Diagram**



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6. **CONCLUSION:**

This device marks a big step in secret cyber tools. By blending in like a flash drive, using smart IoT actions, secure hidden communication, and physical self-destruction, it brings a new type of cyber weapon that could change how spying is done in the digital age.

The device's mix of stealth, smarts, and toughness makes it a strong tool in any cyber fight or intelligence-gathering task.

DETAILED DESCRIPTION:

1. Device Bits:

ESP32 unit, 32GB MicroSD card, control chip, voltage booster, small parts.

2. Look:

Housed in normal flash drive shell; heat sinks near booster.

3. Power:

Works on 5V from USB.

4. Storage:

SD card for normal files plus secret logs.

5. Network Use:

Uses host's session to go on TOR; no direct WiFi.

6. Forensic System:

Checks voltage changes, USB patterns, current jumps.

7. Self-Destruct:

Voltage booster makes bursts of >30V to damage SD card.

8. Data:

AES-encrypted before saving or sending.

9. Control Chat:

Asks hidden TOR server for commands often.

10. Safety:

Failsafe destruction if offline long or can't reach server.

Conclusion:

The gizmo is a full rogue USB with built-in computer defense and self-destruct.

SYSTEM COMPONENTS

1. ESP32 Unit:

Main part, can WiFi chat, act as USB (using TinyUSB), talk to SD card.

2. MicroSD Storage:

At least 32GB storage; works like normal flash drive while hiding logs and scripts.

3. USB Plug (Type-A Male):

Connects to host machine, gives 5V power, handles USB data chatting.

4. Voltage and Current Checking:

Custom parts check USB VBUS and D+ / D- line talk for changes linked to probing or tools.

5. Voltage Booster and Destroy:

Circuit to boost 5V to around 100V (or enough to fry SD card) when triggered.

6. Fake Casing:

3D-printed or molded to look like normal flash drive to avoid notice.

7. Passive Cooling:

Metal inner casing or heat-moving stuff to cool during normal use and heat fast during destruct.

8. Firmware:

Software on ESP32 to manage logging, encrypting, forensic checking, TOR chatting, and self-destruct.

9. Data Encryption:

Light (e.g., AES-128) encryption of logs before sending to keep secret even if data is taken.

10. TOR Chat Module:

Built-in ways to send data secretly through host's net without detection.

Conclusion:

Each part is key to make the gizmo work, stay hidden, and be solid under checks.

IoT SENSORS AND CHAT

1. USB Signal Three-Way Change:

ESP32 inner ADCs check odd changes in USB D+/D- signaling to spot hostile probing.

2. Voltage Watching:

Constant checks of 5V VBUS line for strange drops or spikes linked to forensic attacks.

3. Current Use Look:

Checking parts measure current use now, flagging odd values as threats.

4. WiFi Scan:

ESP32 can quietly scan nearby networks to find open spots or check the host's net link.

5. Host Chat Takeover:

Using USB network profiles to use host TCP/IP stack for net use without raising alarms.

6. TOR Use:

Secured chat with hidden onion servers to send data with low trace.

7. Passive Event Watch:

Firmware listens to USB “keep-alive” packets and talk times to see if checks are happening.

8. Host Activity Watch:

Logging host idle times (no keyboard use) to pick safe times to send bursts.

9. Data Send (Optional):

After key data is taken, optional HID payloads can be sent (like opening a command line and self-wipe).

10. Triggered Self-Destruct:

All sensors feed into a choice tree. Certain limits automatically trigger self-destruct rules.

Conclusion:

With many sensors, the gizmo turns into a smart, reactive agent able to guard itself in tough spots.

MAIN SYSTEM CONTROL

1. On-Device Brain:

ESP32 runs rules to know when to get data, send, or blow up.

2. Take in Data System:

Keys or files saved first in locked bits before sending.

3. TOR Tunnels:

Makes hidden paths for data to go out without being seen.

4. Blow-Up Handler:

Watches power and signals to see if it needs to blow up.

5. Code Update Handler:

Can check hidden TOR sites for updates.

6. LEDs (Low-Key):

Tiny LEDs inside for checks during build.

7. Data Check:

Checks data to make sure it's right before blow-up (to avoid loss).

8. Power Control:

Saves power by turning off WiFi when idle.

9. Lock-up System:

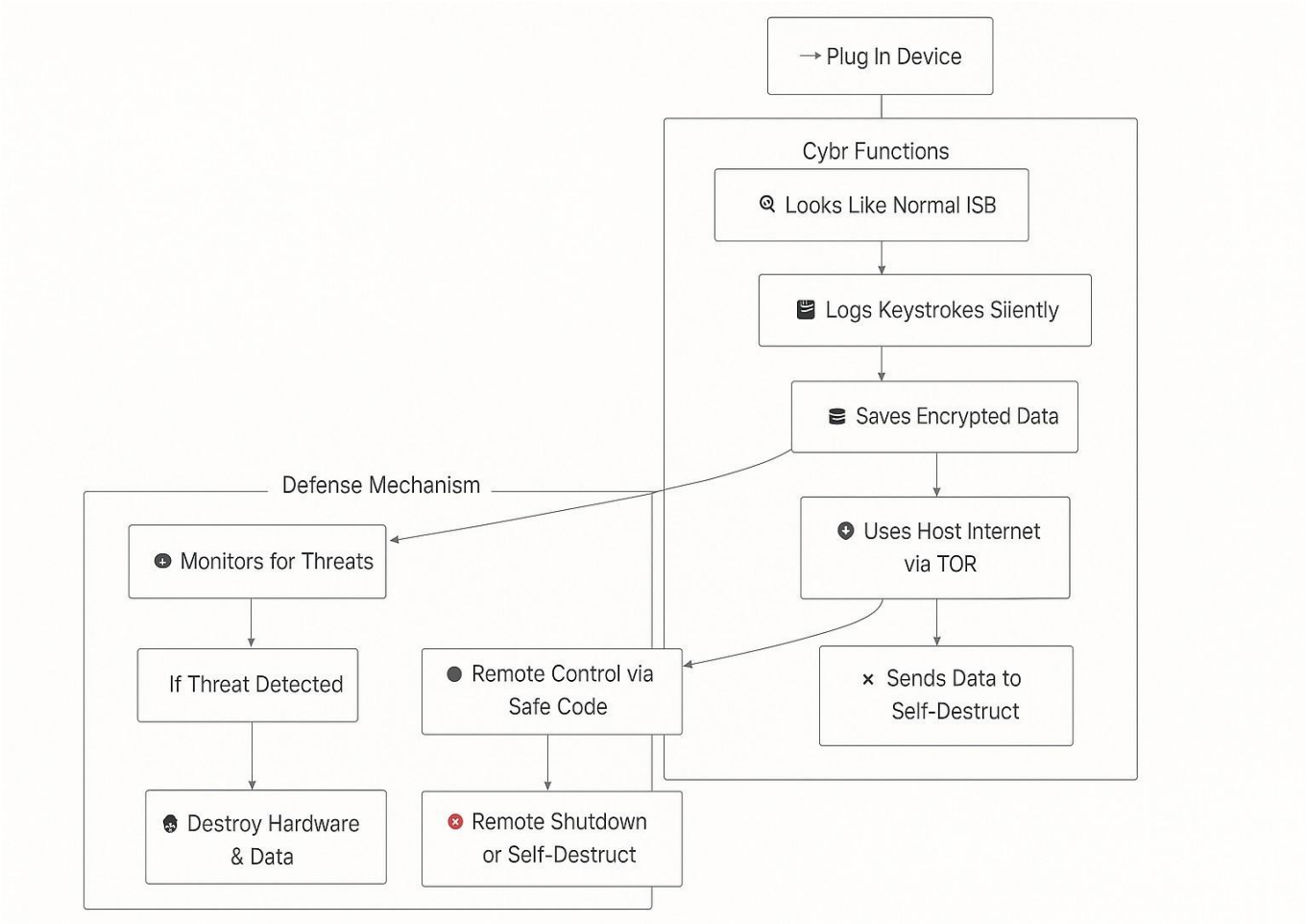
Makes keys each time and keeps them only in quick-use memory.

10. Wipe-on-Catch:

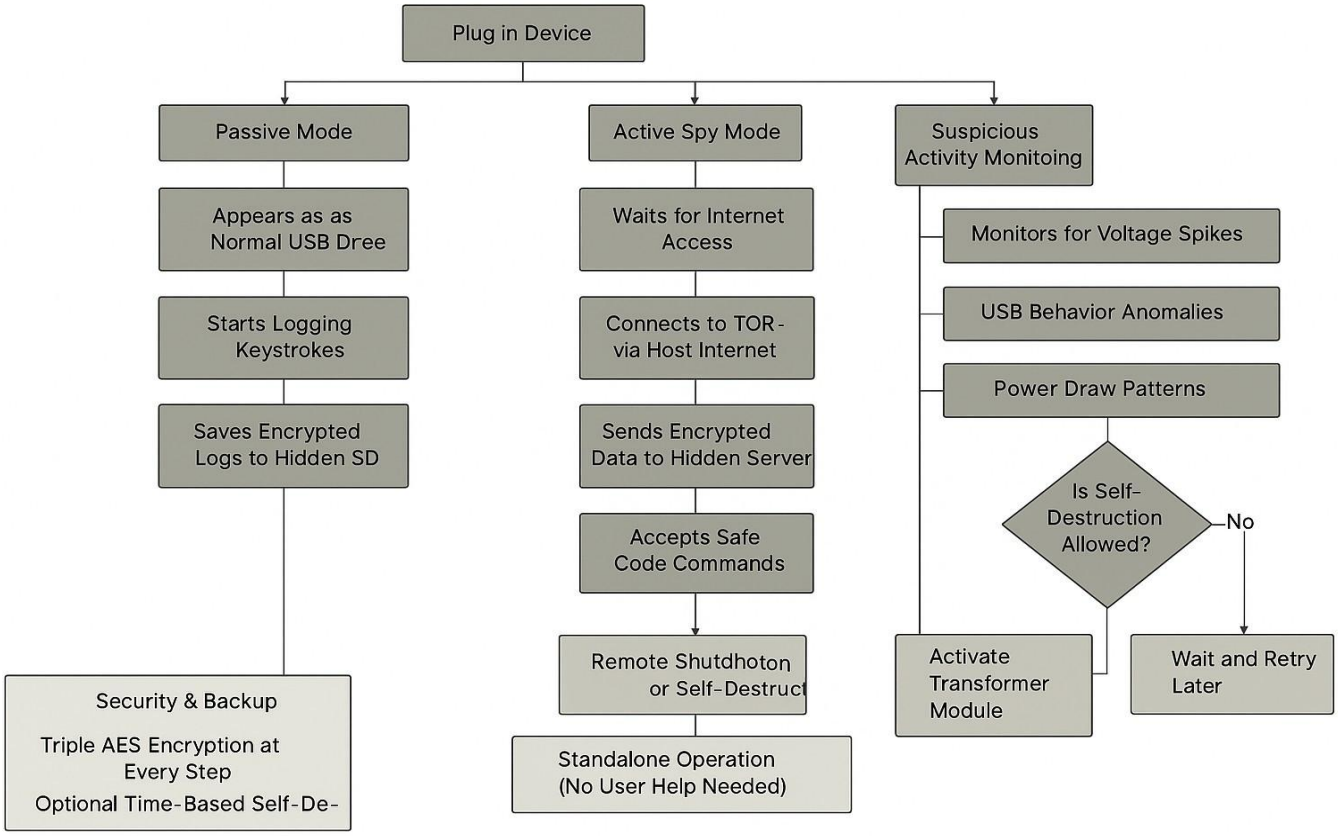
If plugged into bad ports (e.g., checker PCs), erases all memory fast.

End:

Makes the tool work alone as a spy gear.



Process Workflow:



HIDDEN TECH

1. Quiet Key Record via HID:

Looks like a keyboard, gets keys or sends commands in secret.

2. SD Card Store:

Logs and data kept on a hidden part of the card - users can't see.

3. Sees Odd USB Action:

Watches USB lines for things like power change or too many checks.

4. TOR Link:

Uses PC internet to link TOR for sending data.

5. Blow-Up from Power Spike:

If bad action is seen, turns on to break the memory chip.

6. Data Lock Before Sending:

Data locked at the start to stop others from seeing it.

7. Signal Check Match:

Looks for known signs of checker tools.

8. PC System Check:

Works out if it's in a Windows, Linux, or Mac PC and changes behavior (Windows is main goal).

9. Live Threat Check:

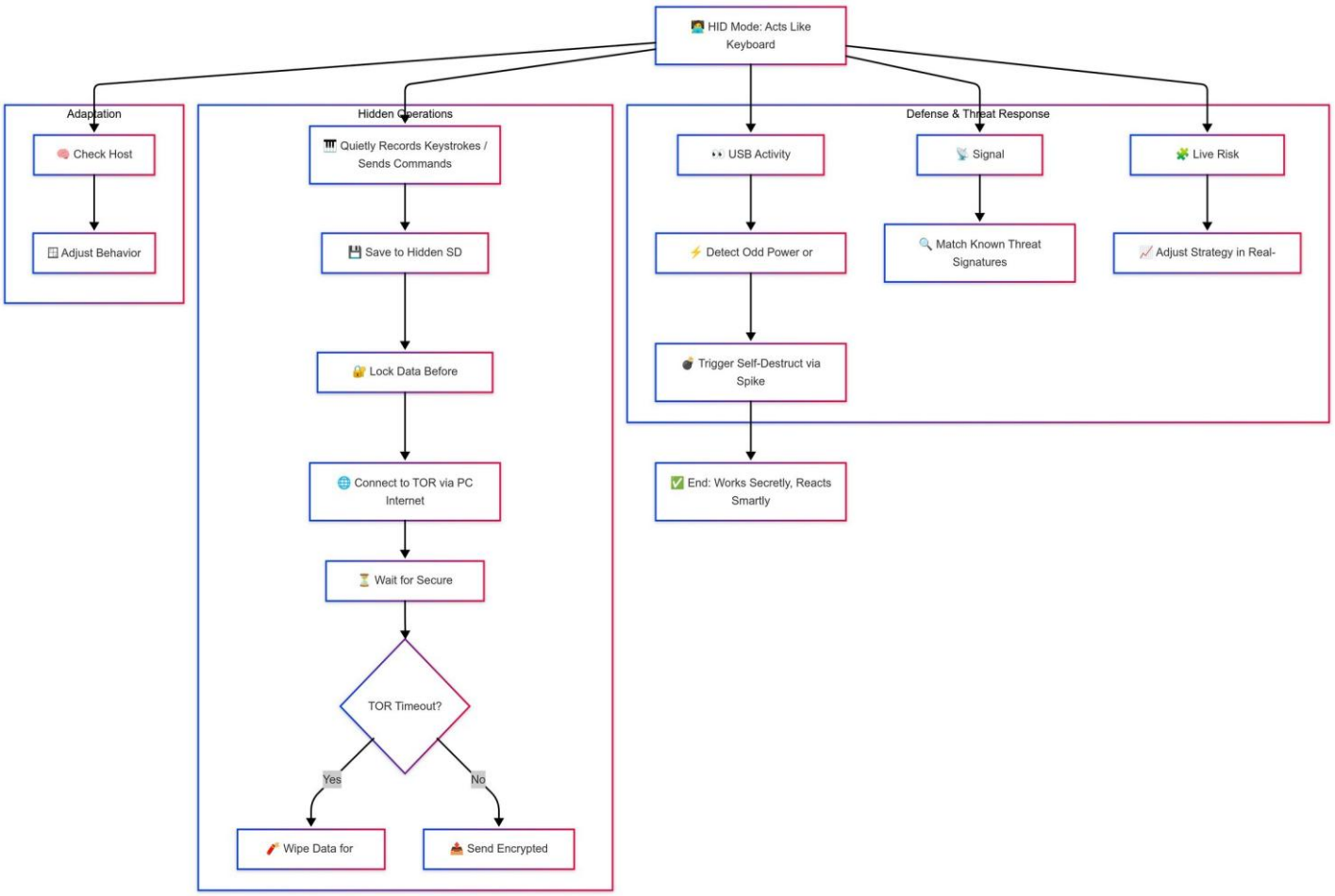
Keeps checking risk and adjusts actions.

10. Timeout Safety:

If no TOR link in time, can choose to wipe data.

End:

Tech setup aims for secret, smart work making the spy tool hard to find.



LIVE DATA CONTROL

1. Instant Key Take:

Each key press logged with time, keeping event right.

2. Wait to Write:

Waits to write to SD card to avoid wear.

3. Log Extra Data:

Logs keys and also states, window titles, and user stuff.

4. Data Shrink:

Data made smaller before locking to save space.

5. Error Fix:

Checks and can fix data before sending or storing.

6. Quiet Sync:

Data sent out when internet found, in secret.

7. Masked Data:

All link-related data is hidden to cut risks.

8. Forensic Proof:

Writes spread out on card to stop recovery.

9. Fast Data Dump:

If attack seen, all data sent out, then starts blow-up.

10. Clean Schedule:

Old data wiped with many passes making sure nothing remains.

End:

Live data work keeps logs and cuts risk of getting caught.

SPECIAL PARTS

1. Blow-Up Action:

Has small tool to break SD card and memory if tampered with.

2. Dual USB Trick (Store + HID):

Looks like both a drive and a keyboard, logs keys without notice.

3. Power Watch:

Checks power and data lines nonstop, triggers defense if odd things are seen.

4. Hidden Data Send:

Uses TOR to send data, keeping it untraceable.

5. Quiet Work:

Does not show up, only sends data in safe times, cutting detect risk.

6. Wipe on Alone:

If cut from network fast, erases all memory and gets ready to blow up.

7. Smart Threat Check:

Not all odd things mean blow-up. Judges if need is there.

8. Secret Look:

Looks like an old drive, can't be picked out from many others.

9. Locked Inside Talk:

Inside talk and data locked to stop attacks.

10. Live PC Check:

While on, keeps checking PC (OS version, networks, active apps) to spot checks or safe spaces.

GAINS AND PLUSES

1. Hidden Path:

Thanks to TOR, data send has no trace back to owner.

2. High Stay Rate:

Only top checks may find it - still, blow-up means no data left.

3. Many Use Cases:

Can be used for tests, secret missions, or alert actions for safe data grab and send.

4. No Special Needs:

As it uses common USB rules (HID and Store), PC needs no extra drivers.

5. Fast Data Kill:

Kill is real, not just a fake wipe, advanced tools can't get data back.

6. Power Safe:

Even if checks watch power use, runs like a common flash drive till triggered.

7. Works on Many PCs:

Best on Windows, but can run on Mac and Linux too.

8. Cheap Build:

Uses ESP32 WROOM-32, easy PCB, small SD, and step-up tool, affordable unlike military gear.

9. Easy Use:

Once in, it runs alone, no user action needed.

10. Small Trace:

Leaves nothing on the PC, no remains even with fast checks.

EXPANSION

1. Add Bluetooth LE (BLE) Command Channel: Let nearby operator trigger self-destruction or silent shutdown remotely.

2. Integration with Cellular Modules: Device sends data over 4G/5G, skipping host's internet.

3. Advanced Forensic Detection Algorithms: Use machine learning in ESP32 to spot subtle forensic attacks or sandboxes.

4. Camouflaged Form Factors: Make the device look like coins, pens, or key fobs to avoid suspicion.

5. Multi-Step Destruction: Destroy flash storage and break key microcontroller paths to stop hardware reverse-engineering.

6. Self-Healing Functions: After a small threat, wipe only recent data, not all.

7. On-Device AI Analysis: Check keystrokes locally to spot patterns (e.g., passwords vs. random typing) and decide which data to send first.

8. Fake Data Output: During forensic check, show fake harmless files to mislead.

9. Battery Backup: Small battery or capacitor ensures self-destruction even if USB power cuts off.

10. Cluster Deployment: Distribute many devices across machines to catch data and destroy in sync if one gets compromised.

WORKING PROTOTYPE / DESIGN / COMPOSITION

1. Microcontroller: ESP32 WROOM-32 with Dual-core, 240 MHz, 4 MB Flash, WiFi, and BLE capability.

2. Storage: MicroSD card module, at least 32GB, write cycle optimized.

3. USB Interface: CP2102N or native USB OTG from ESP32 for emulating HID and Mass Storage.

4. Power Circuit: 5V USB input, with boost circuit generating 15V-20V for physical destruction.

5. Sensors:

• Current sensor (INA219 or simple shunt resistor)

• Voltage monitor (via internal ADC)

• Passive USB data sniffer (USB differential line tap)

6. Stealth Casing: Old USB drive shell, metallic shielding inside to block RF emissions.

7. Firmware:

• FreeRTOS multi-threaded application

• Custom USB stack for HID+Mass Storage mode

• Lightweight AES encryption

• TOR client for ESP32

8. Destruction Circuit: Triggered by GPIO pins, with voltage detect thresholds, activating transformer via MOSFET switch.

9. Testing Setup: Use forensic USB tools (e.g., USBlyzer, Wireshark USBPcap) to simulate attacks and adjust detection.

10. Prototype Output: Small, thumb-sized USB stick for stealth, test in real settings like offices

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EXISTING DATA

• WiFi and Networking: ESP32 has TCP/IP stack, handles encrypted WiFi comms, proxies, TOR hidden services.

• SD Card Protocols: MicroSD cards use SPI with robust libraries for read/write.

• Step-Up Transformer Working: Small DC-DC converters (boost) raise 5V USB to 15V–20V, burning out SD card circuits.

• USB Protocol Basics: USB Mass Storage uses SCSI over Bulk transfers, HID uses Interrupt transfers — emulatable by ESP32 libraries.

• Forensic USB Analysis: Forensic attacks involve descriptor requests, voltage surges, and current draws, detectable by monitors.

Conclusion:

Building this device needs skills in microcontroller firmware, electrical design, cybersecurity, and forensic countermeasures to make a true "ghost device" that stays hidden and self-destructs if caught.