Review Guide

Tapo H500

Smart HomeBase

tapo

matter · works with amazon alexa · works with Google Home

Announcement

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Contents

01

Product Overview

Product Overview

1.1 Product Introduction

Tapo Smart HomeBase is your smart home center that connects up to 16 cameras and 64 sensors to build your own smart home ecosystem. Paired with your tablet to view and control your home on a larger screen. With the 3D whole home view, enjoy total control at a glance.

Connect the HomeBase to network via Wi-Fi (5GHz) without the hassle of complex wiring. Ethernet networking is also supported, giving you flexible connection options.

Tapo H500 works as both a Matter controller* & bridge. Integrate and control more Matter-certified products into the Tapo ecosystem for seamless collaboration. Integrate connected devices to other Matter-compatible ecosystems for unified control.

With 16GB[§] of built-in storage, expandable up to16TB via an additional hard drive, you can store massive video clips locally. Save money by avoiding extra SD cards and monthly fees for your security cameras.

The AI Empowerment feature enables connected cameras to support facial recognition and other AI features.

matter
All-in-One Security Solution
Smart HomeBase Tapo H500

works with alexa
works with Google Home

Tapo H500
Smart HomeBase

16 Channel IPC Input

Local Storage, No Monthly Fee

Facial Recognition Enhancement

110 dB Real-time Alarm

HDMI Output

Matter Controller

Third Party Camera Access

Event Management Center

USB Export and Sharing

Item	Spec
Model	Tapo H500
Device Quantity	Up to 16 Cameras + 64 Sensors
Storage	Built-in 16GB eMMC Expandable Storage: 1-Bay, 2.5" SATA HDD/SSD
Alarm	Built-in 110dB Alarm Speaker
Advanced AI	Self-Learning Algorithm, Facial Recognition, Person/Pet/Vehicle Detection
Multi-Layer Encryption	AES 128-bit, TLS 1.2
Connectivity	2.4+5GHz Wi-Fi / Ethernet + Sub-1GHz
Interface	1 * USB 2.0, 1* TYPE-C, 1 *HDMI 1 * LAN, 1 * DC
Third Party	Matter Controller/Alexa/Google Home ONVIF(Developing)

Product Overview

1.2 Expandable Local Storage

With 16GB[§] of built-in storage, expandable up to16TB via an additional hard drive, you can store massive video clips locally. Save money by avoiding extra SD cards and monthly fees for your security cameras.

[§]A portion of the 16GB eMMC storage will be used by the product system.

Product Overview
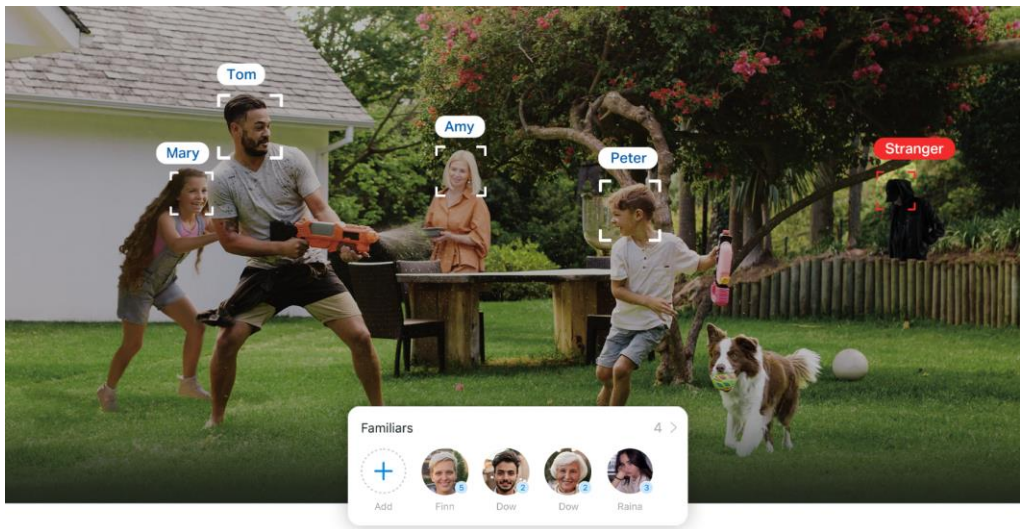
1.3 Key Features

1.3.1 Fortified Privacy Protection

Tapo H500 safeguards your recordings with AES 128-bit and TLS 1.2 encryption. Its AI functionalities are processed locally, eliminating cloud uploads for complete data control and enhanced security.

1.3.2 Face Recognition

Identifies strangers, family, and friends, categorize them to trigger alarms selectively, and track their activities across cameras*, enhancing accuracy and minimizing false alarms.

*Facial tracking will be supported soon.

Product Overview

1.3 Key Features

1.3.3 Smart Live View and Playback

Watch live views and playback on your phone or pad, or monitor up to 4 channels in real-time on a large screen via the HDMI port.

1.3.4 AI Enhanced Accuracy

Tapo H500 transforms connected cameras with intelligent AI features, while boosting detection accuracy and expanding functionalities for AI-equipped models. Its self-learning algorithms refine recognition over time, adapting to feedback and ensuring your security evolves with precision and reliability.
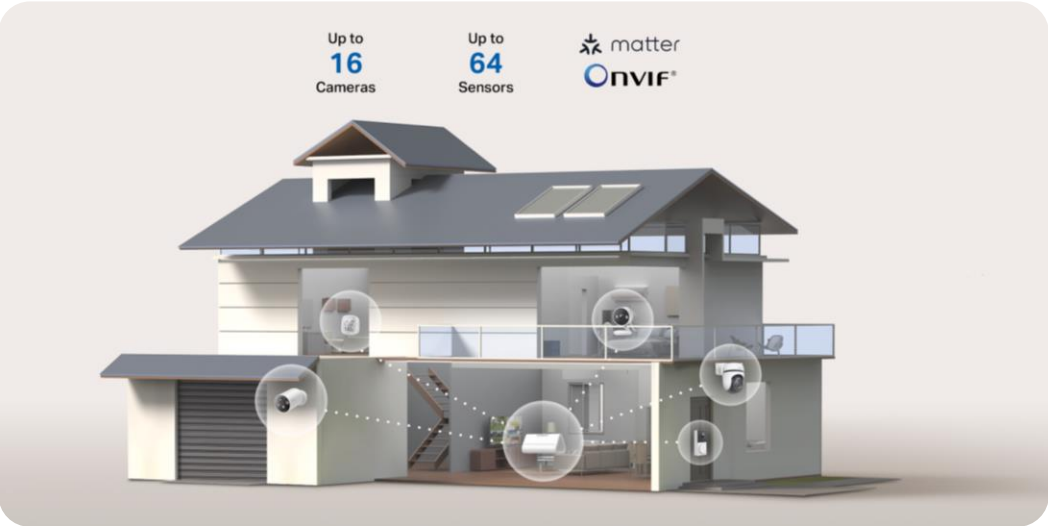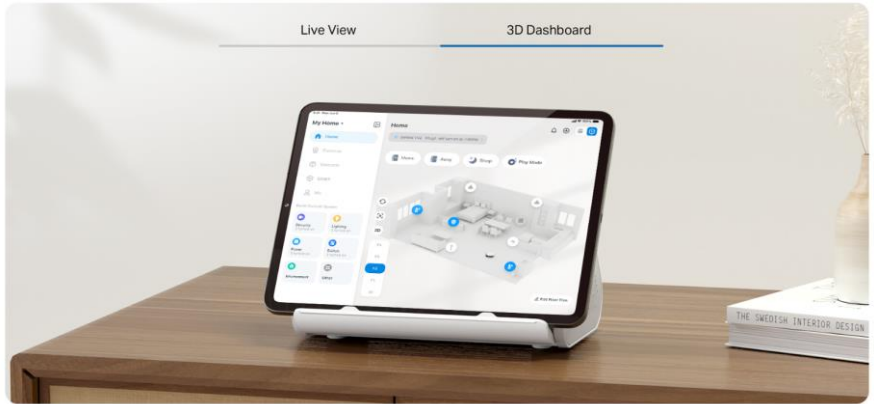
Product Overview

1.3 Key Features

1.3.5 Smart Home Ecosystem Center

Capable of connecting and managing up to 64 smart sensors and16 cameras to build your own smart home ecosystem. Supporting Matter, Tapo H500 connects seamlessly with various smart devices, eliminating the need for additional Matter controllers and simplifying your smart home setup.

1.3.6 Unified Monitoring on Your Tablet

Effortlessly monitor multiple camera feeds from various locations on one screen with an extra tablet*. View live video from up to 4 cameras while also enjoying a clear overview of all your Tapo smart home devices using the tablet version of your Tapo app.

Product Overview

1.3 Key Features

1.3.7 Built-in Alarm

Enhance your security with Tapo H500's 110dB alarm. Integrate with other Tapo devices to automatically trigger alerts for unfamiliar faces, providing a robust safety system that keeps your home secure.

1.3.8 Doorbell Voice Call

The Tapo H500 features a built-in microphone and speaker for real-time two-way audio, allowing easy communication with visitors when connected through the doorbell.

02

Performance Contrast

- Wireless Performance

- AI Empowerment

- Facial Recognition

- Ringtone Loudness

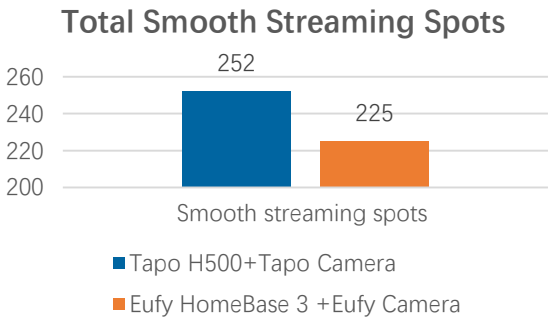- Connection Capacity and Compatibility

- Competitive Battle Card

Performance Contrast

2.1 Wireless Performance

- **Wireless Coverage**

Connect the HomeBase to an IPC camera and test the camera's streaming smoothness at different locations with different angles. This guide mainly compares the Tapo H500's wireless performance with Eufy HomeBase 3.

Locations	Device	Smooth streaming spots	Lag streaming spots	Serious Lag streaming spots	Loading Failed spots	Camera Offline	Lag + Loading Failed + Offline
Sum	Tapo H500+Tapo Camera	252	27	37	13	17	89
	Eufy HomeBase 3 +Eufy Camera	225	36	31	15	36	107
Dinning Room	Tapo H500+Tapo Camera	51	6	4	0	0	7
	Eufy HomeBase 3 +Eufy Camera	60	1	1	0	0	3
Room1	Tapo H500+Tapo Camera	50	4	7	0	2	10
	Eufy HomeBase 3 +Eufy Camera	53	5	4	1	0	6
Entrance Door	Tapo H500+Tapo Camera	57	1	3	0	0	6
	Eufy HomeBase 3 +Eufy Camera	39	8	7	1	0	17
Room3	Tapo H500+Tapo Camera	28	7	9	9	4	29
	Eufy HomeBase 3 +Eufy Camera	9	8	7	5	32	52
Room2	Tapo H500+Tapo Camera	43	3	9	2	0	14
	Eufy HomeBase 3 +Eufy Camera	40	2	5	4	0	11
P2	Tapo H500+Tapo Camera	23	5	5	2	11	23
	Eufy HomeBase 3 +Eufy Camera	24	3	1	4	4	18

Total Smooth Streaming Spots

252 (Tapo H500+Tapo Camera)
225 (Eufy HomeBase 3 +Eufy Camera)

Smooth streaming spots
- ■ Tapo H500+Tapo Camera
- ■ Eufy HomeBase 3 +Eufy Camera

Overall performance:
Tapo H500 > Eufy HomeBase 3

Performance Contrast

2.1 Wireless Performance

- **Wireless Range**

Connect the HomeBase to an IPC camera and test the camera's streaming smoothness in different ranges (120m, 140m, 170m) at different angles. This guide mainly compares the Tapo H500's wireless range with Eufy HomeBase 3.

Connect to accessories (2.4GHz)
(Connect HomeBase to the router using an Ethernet cable and place the camera at different distances from the HomeBase)

Device	Smooth streaming spots	Slight Lag streaming spots	Lag streaming spots	Serious Lag streaming spots	Total Lag Spots
Tapo H500+Tapo C425	21	2	11	14	25
Eufy HomeBase 3+Eufy S300	23	7	14	6	20

Overall performance in wireless range for communication with accessories:
Tapo H500 ≈ Eufy HomeBase 3

Connect to router (5GHz connection for Tapo H500, 2.4GHz connection for Eufy HomeBase 3*)
(Connect HomeBase to the router wirelessly. Place the camera and HomeBase together, and move them to different distances from the router)

Device	Smooth communication spots	Slight Lag communication spots	Lag communication spots	Serious Lag communication spots
Tapo H500+Tapo C425	34	2	0	0
Eufy HomeBase 3+Eufy S300	19	7	9	1

Overall performance in wireless range for communication with the router:
Tapo H500 (5GHz) > Eufy HomeBase 3 (2.4GHz)

*Note: Eufy HomeBase 3 only supports 2.4GHz wireless connection to the router while Tapo H500 supports 5GHz wireless connection to the router. In comparison, Tapo H500 outperforms Eufy HomeBase 3 in wireless performance.

Performance Contrast

2.2 AI Empowerment

AI Empowerment enhances the AI capability of connected cameras and doorbells.

- **Empower cameras to support more AI detection types**

Enhanced Detection Types	Facial Recognition
	Person Detection
	Vehicle Detection
	Pet Detection

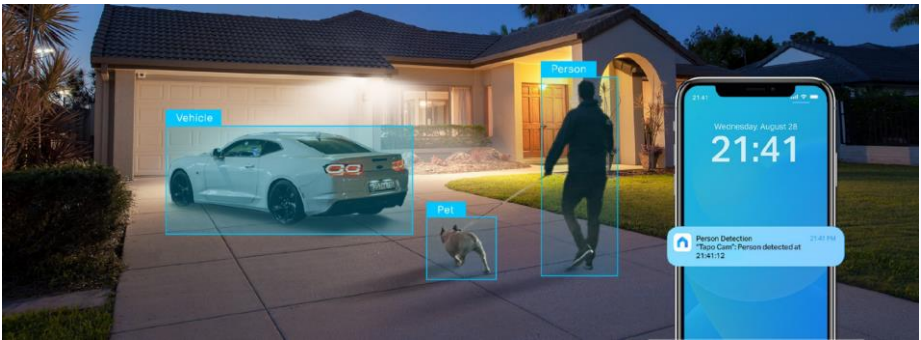**Without AI Empowerment**

There is only motion detection, no specific detection for people/vehicles/pets and no tags for them.

With AI Empowerment

Besides detect motion, the camera is empowered to support specific detection for **people/vehicles/pets** and will apply tags for them. **Facial recognition** is also supported with AI Empowerment. Users can check the **facial recognition report** for an insight into the activities for the strangers and familiars.

Facial Recognition Report

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Performance Contrast

2.2 AI Empowerment

AI Empowerment enhances the AI capability of connected cameras and doorbells.

- **Enhance already equipped AI capabilities**

	Tapo C500 (Camera)		Tapo D130 (Doorbell)	
	Not Empowered	AI Empowered	Not Empowered	AI Empowered
Events	231	185	339	286
Recording Time	9256 s	9276 s	11396 s	11557 s
Missed Recordings	14.29%	10.27%	3.83%	2.85%

With AI Empowerment enabled, missed recordings drop obviously.
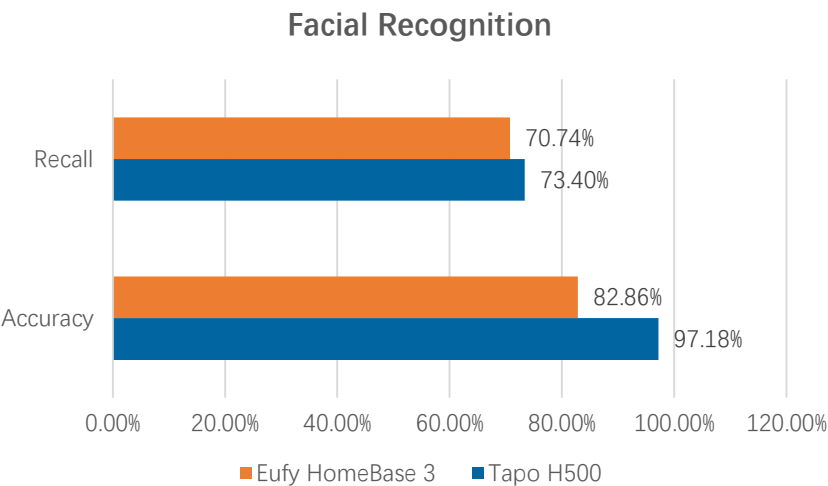
Performance Contrast

2.3 Facial Recognition

Connect the HomeBase with cameras and test the facial recognition performance. This guide compares the facial recognition performance of Tapo H500 and Eufy HomeBase 3.

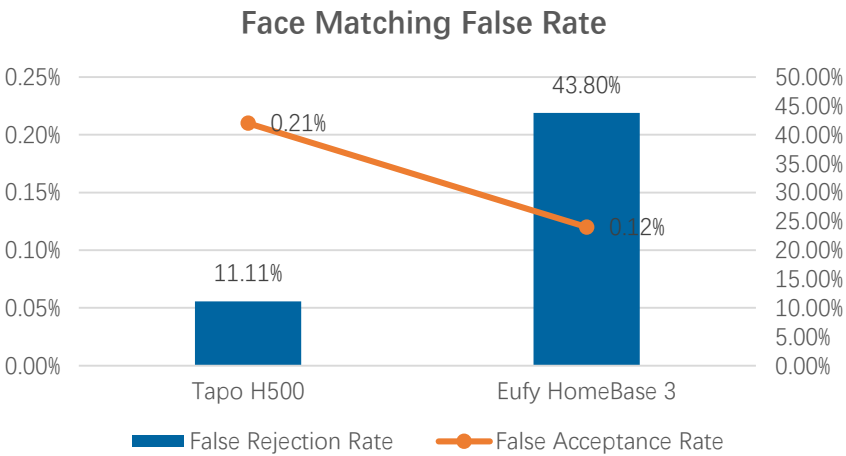### When triggered by a specified number of attempts:

Use the same pictures to trigger Tapo and Eufy cameras and compare their recordings:

- **Facial Recognition**

Facial Recognition

Recall: Eufy HomeBase 3 70.74%, Tapo H500 73.40%
Accuracy: Eufy HomeBase 3 82.86%, Tapo H500 97.18%

■ Eufy HomeBase 3   ■ Tapo H500

Overall performance in facial recognition:
Tapo H500 > Eufy HomeBase 3

- **Face Matching (threshold: 0.45)**

Face Matching False Rate

Tapo H500: 11.11% (False Rejection Rate), 0.21% (False Acceptance Rate)
Eufy HomeBase 3: 43.80% (False Rejection Rate), 0.12% (False Acceptance Rate)

■ False Rejection Rate   ●— False Acceptance Rate

Overall performance in face matching:
Tapo H500 > Eufy HomeBase 3

False Rejects: The number of legitimate attempts incorrectly rejected by the system.
False Accepts: The number of impostor attempts incorrectly accepted by the system.

Performance Contrast

2.3 Facial Recognition

Connect the HomeBase with cameras and test the facial recognition performance. This guide compares the facial recognition performance of Tapo H500 and Eufy HomeBase 3.

When triggered within a specified period of time:

Place the connected cameras/doorbells at the same location and compare their recordings:

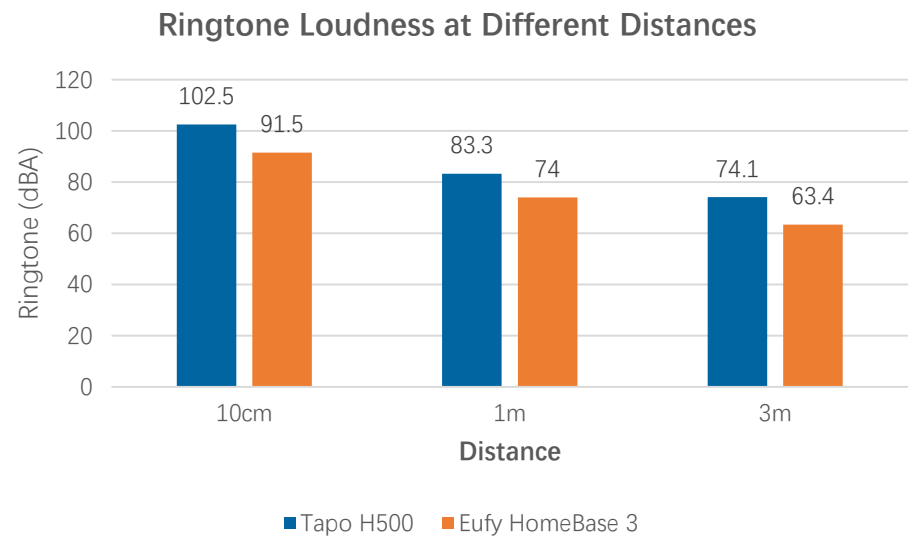|	Camera		Doorbell	
	Tapo C460	**Eufy S330**	**Tapo D235 (Doorbell)**	**Eufy 1080P (Doorbell)**
Total Recordings	310	43	220	166
Faces Recognized	6	2	34	4
Facial Recognition Recordings	98	12	40	16

Overall performance in facial recognition:
Tapo H500 > Eufy HomeBase 3

Tapo cameras record whenever it detects motion, ensuring that nothing gets missed.
Eufy cameras have much fewer recordings since they utilize a passive infrared (PIR) sensor to detect motion. Some moving objects might not trigger the PIR sensor or wake up the camera.

Performance Contrast

2.4 Ringtone Loudness

As the alarm center, Tapo H500 will sound an alarm when triggered to keep your home secure, This guide compares the ringtone loudness in default volume at different distances of Tapo H500 and Eufy HomeBase 3. Tapo H500 has a louder ringtone.

Ringtone Loudness at Different Distances

Overall performance in ringtone loudness:
Tapo H500 > Eufy HomeBase 3

Performance Contrast

2.5 Connection Capacity and Compatibility

Tapo H500 has a larger device connection capacity and AI-empowers more devices at a time than its competitor Eufy HomeBase 3.

Tapo H500 supports HDMI output with up to 4 streaming channels simultaneously, while Eufy HomeBase 3 does not support HDMI output.

Tapo H500 supports third-party cameras via ONVIF*, while Eufy HomeBase 3 does not support ONVIF.

	Max No. of Connected Devices	Max No. of Devices Empowered Simultaneously	HDMI Output	Max No. of Devices Enabling 24/7 Recording Simultaneously	Compatibility
Eufy HomeBase 3	16 cameras 34 sensors	4 cameras	Not supported	4 cameras	Eufy sensors/cameras/doorbells
Tapo H500	16 cameras 64 sensors	6 cameras	Up to 4 channels	4 cameras	Tapo sensors/cameras/doorbells; Third-party cameras via ONVIF*

*ONVIF will be supported soon by updating the firmware.

Overall performance:
Tapo H500 > Eufy HomeBase 3

Performance Contrast

2.6 Competitive Battle Card

This guide compares the specifications and features of Tapo H500, Eufy HomeBase2, Eufy HomeBase3, Reolink Home Hub and Reolink Home Hub. Tapo H500 is quite competitive in overall performance.

Spec & Features		Tapo H500	Eufy HomeBase 3	Eufy HomeBase2	Reolink Home Hub Pro	Reolink Home Hub
Appearances						
Regular Price /Promotional Price(DE Amazon)		MSRP 129€	179€/139€	MSRP 89€	299€/239€	109.99€/89.9€
Connection to Router		Wired & Wireless (5GHz)	Wired & Wireless (2.4GHz)	Wired	Wired	Wired
Number of Sub-Devices Accesses	Smart Home Sensors	64	34	34	×	×
	Security Cameras	16	16	16	24	8
AI Enhancement	Facial Recognition	√	√	×	×	×
	Target Recognition	√	√	×	×	×
Storage Management	Built-In Storage	16GB EMMC	16GB EMMC	16GB EMMC	2TB HDD	64GB microSD
	Expandable Storage	Up to 16TB HDD/SSD	Up to 16TB HDD/SSD	×	Up to 16TB HDD/SSD	Up to 512GB * 2 mircoSD
	Storage Encryption	AES-128	AES-128	AES-128	AES-128	AES-128
Event Management	Smart Playback	√	√	√	√	√
	Event History	√	√	√	√	√
	Event Summary	√	√	√	√	√
	USB Video Sharing	√	√	×	√	×
	USB Video Export	√	√	×	√	×
	HDMI Video Output	√	×	×	√	×
Interface	Mic & Speaker	Built-in Speaker & Mic	Built-in Speaker	Built-in Speaker	Built-in Speaker	Built-in Speaker
	External Charging Port	Type-C (5V 1.5A)	USB-A	USB-A	–	–
	Others	Bracket for Tablets	–	–	PC	–
Third-party Compatible	Alexa	√	√	√	√	√
	Google	√	√	√	√	√
	Matter	√	×	×	×	×
	ONVIF*	√	×	×	×	×

*ONVIF will be supported soon by updating the firmware.

03

Spec Information

Spec

Network

- **Network:** 2.4 GHz + 5 GHz Wi-Fi / Ethernet + Sub-1GHz
- **Encryption Protocol Type:** 128-bit AES Encryption with SSL/TLS
- **Protocol:** TCP/IP, ICMP, DNS, HTTPS, TCP, UDP, DHCP, ARP

Hardware

- **Device Quantity:** Up to 16 cameras and 64 sensors
- **Built-in Storage:** 16GB eMMC
- **Expandable Storage:** 1-Bay, 2.5" SATA HDD/SSD, up to 16TB
- **Ports:** 1* USB 2.0 Port, 1* USB Type-C Port, 1* HDMI Port, 1* LAN Port, 1* Power Port
- **Buttons:** 1* Reset Button, 1* Answer/SYNC Button, 1* Decline/Mute Button, 1* Volume Up Button, 1* Volume Down Button
- **LAN Port:** 1* 10/100 Mbps
- **USB Ports:** 1* USB-A for data transfer, 1* USB-C for charging
- **USB-C Output:** 5V/1.5A
- **USB-A Output:** 5V/0.5A
- **Siren:** 110dB Alarm Siren

General

- **Dimensions (L x W x H):** 6.31 x 3.89 x 3.28 in. (160.20*98.82*83.21mm)
- **Operating Temperature:** 0℃– 40℃ (32°F–104°F)
- **Storage Temperature:** -20℃~60℃ (-4°F~140°F)
- **Operating Humidity:** 10%~90%RH, Non-condensing
- **Storage Humidity:** 5%~90%RH, Non-condensing

Package Contents

- Tapo H500
- Screws
- RJ45 Ethernet Cable
- DC Power Adapter
- Quick Start Guide

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