

INDUSTRIAL PRODUCT DATASHEET

SenseCAP Watcher W1-B White Enclosure - The Physical AI Agent for Smarter Spaces

SenseCAP Watcher W1-B White Enclosure - The Physical AI Agent for Smarter Spaces: an open-source, AI-powered vision sensor with on-device LLM for voice-commanded scene understanding and event response.

SKU	UPDATED	PRICE
113991275	2026-07-30 08:32:37	\$54.90(Excl. VAT)



Overview



SenseCAP Watcher W1-B White Enclosure is a voice-commanded physical AI agent that uses on-device AI and large language models (LLMs) to understand scenes, detect specified events, and respond with voice alerts or triggered actions. It integrates with smart home platforms like Home Assistant, supports on-premise deployment, and enables applications such as pet monitoring, smart home control, and DIY AI projects.

Key Features

SenseCAP Watcher Price Adjustment Announcement:

After careful evaluation, the pricing of SenseCAP Watcher has been thoughtfully adjusted to make it even more accessible. For more details, please check [here](#).

Notice:

- This device is the AI Vision Edition, exclusively designed for running recognition models (e.g., face or animal detection). It is NOT compatible with the XiaoZhi AI Chatting firmware; If you are looking for the interactive AI Chatting Assistant version, please [\[Click Here to Buy\]](#).

Feature 1: Simply Speak Your Command

Simply speak to Watcher, tell it what to watch, and it will notify you when the specified event occurs.

You can easily send commands by Push to Talk or from SenseCraft App.

Feature 2: Understand What it Sees

Running on-device AI models, SenseCAP Watcher can detect different things: people, apples, pets, etc. However, the most outstanding feature of Watcher is its integration with LLMs.

By leveraging LLMs, **Watcher can capture precise events you specified**, it means going beyond simple target detections, it thoroughly analyzes **behaviors and status**. Like "dog + playing ball, 0 people + in the room," or "The People + with DHL outfit arrived " etc. Watcher truly understands the scene under its watch!

Constantly calling LLMs like ChatGPT incurs a high cost. Hence, we use the architecture of **on-device AI + LLMs**. The on-device AI model on Watcher detects the target, which is then analyzed by LLM to generate accurate and actionable insights.

With the task "tell me if the dog is tearing up paper" when the on-device model detects dogs, this keyframe is sent to LLM for further analysis - is it tearing up paper? LLMs won't be triggered by people, cats, squirrel or others. This tremendously reduces LLMs' cost.

Feature 3: Respond via Voice

After detecting the specified event, Watcher can interact with the targets via voice. For example, you can set it this way:

- Specified event: someone takes up the pink keyboard;
- Specified two reactions: 1) one via voice reply, saying 'Good choice! This is our latest version, inspired by the Pink Royal Typewriter'; 2) the other via a text message to salespersons: 'Someone is interested in the latest keyboard! please go to the shelf ASAP'.

Putting Watcher in different scenarios allows for versatile responses. When seeing a dog tearing up tissues, say "Stop, Cooper!", when seeing a person smoking in non-smoking areas, say "No smoking!"

Feature 4: Upgrade Your Systems with Just a Simple Plug-in

Once the target event is detected, it can trigger different actions, for example, push messages on SenseCraft App or LED flashes on Watcher. Of course, we understand you want to go beyond the functionalities on the App/ device. No problem at all! There are infinite possibilities for you to explore!

Add Watcher to Home Assistant

Connected to IoT platform like Home Assistant, your Watcher **acts as a behavior sensor**, activating tailored actions in various contexts. For example, when it detects people, Watcher analyzes the situation and automatically triggers actions: **lights on for reading and lights off for sleeping**.

When someone sleeping + dim the light

More than a vision sensor, **Watcher is extendable with other sensors to enable multi-modal sensing**. On Watcher's back, the I2C is reserved to accommodate 100+ Grove sensors. This flexibility allows Watcher to integrate a wide range of data sources for thorough analysis and appropriate actions. You will be able to build applications like detect room temperature and adjust the AC accordingly - turn it to 22°C when you're in suits, or 26°C in shorts.

Add Watcher to your Node-RED flow

Just 3 blocks away, you can stream the detected results from your Watcher to any place on the internet via Node-RED, as easy as making a snap!

Add Watcher to your Arduino | ESP32 and other hardware systems

Wanna add an AI agent to popular MCUs and SBCs such as Arduino/ ESP32/ Raspberry Pi? Simply connect it to Watcher via UART or HTTP or USB, and you can explore the new frontier of intelligence.

Feature 5: Give Your Watcher Unique Emotions

SenseCAP Watcher adapts to your commands with unique "modes." It is LISTENING to your instructions, then shifts to WATCHING mode to safeguard your designated space, etc. But the fun doesn't stop here! **You can upload your own designs of emotions to give your Watcher a unique personality**. Get a PNG file ready and upload it to Watcher within seconds! It is your call!

Watcher's default emojis are inspired by C-3PO, paying tribute to one of our greatest helpers!

You can easily upload yours in .PNG format.

You can even custom design a unique UI (User Interface) for your SenseCAP Watcher. Our current UI is powered by [Squareline](#).

Feature 6: Open Source and On-premise Deployment.

As an AI device, it is fundamental to respect privacy. And we embrace and implement two primary strategies in this nifty device.

1. SenseCAP Watcher is open source, giving you full access to thoroughly understand how it works.
2. It supports on-premise deployment. The backbone of SenseCAP Watcher is SenseCraft software suite, which is used to configure Watcher, interpret your commands, and access LLMs. Hence, everything is stored and running privately, ensuring that your models and data are not streamed to any public LLMs or public clouds. SenseCraft can run on Windows/ MacOS / Linux. Since SenseCraft contains LLMs, certain performance criteria are required for the computer, as follows.

You can deploy SenseCraft on your spare computers. However, if you aim for applications requiring commercial-grade reliability and low-power consumption, the combination of SenseCAP Watcher + NVIDIA® Jetson AGX Orin™ is perfect for you!

Compared to consumer-grade graphics cards (e.g. RTX 4090) for AI tasks, NVIDIA® Jetson AGX Orin™ stands out with key advantages:

1. **Industrial-grade reliability:** Designed for industrial and commercial applications, Jetson AGX series boasts a longer MTBF (Mean Time Between Failures). Engineered for 24/7 operation, it offers superior reliability for round-the-clock applications compared to consumer graphics cards.
2. **Compact and low power:** With embedded and edge computing applications in mind, Jetson AGX series are designed in a smaller form factor and consume 3+ times less power, compared to consumer graphics cards. Suitable for constrained spaces, Jetson AGX series generates less heat and helps reduce overall operating costs. This is crucial for embedded systems.

Subscription? You Decide!

SenseCraft AI Services are tailored to your needs.

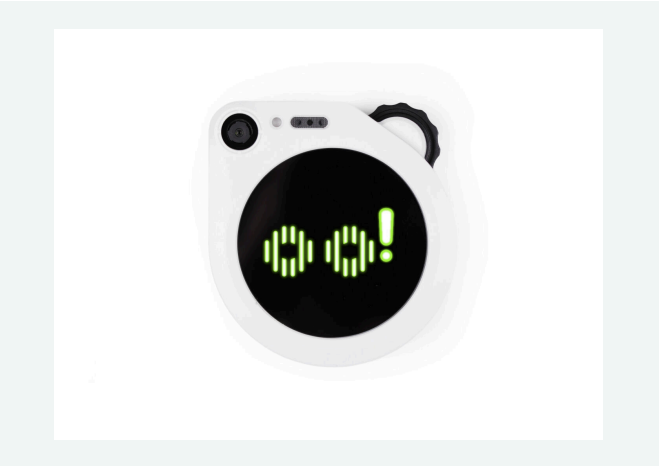
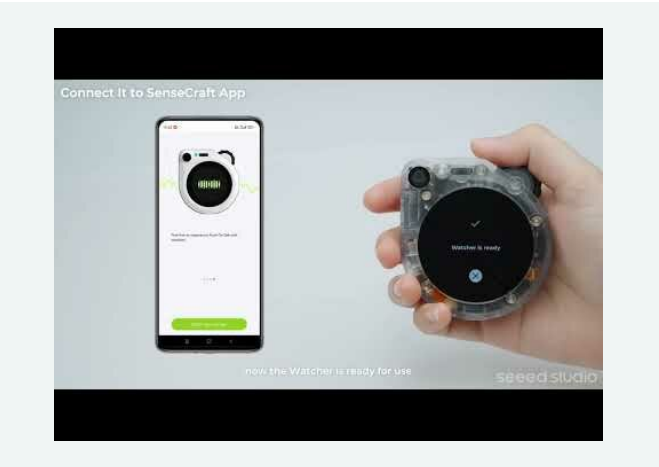
Start with **Basic**, completely FREE for low-frequency: 15min/request for image analysis, 200 chats/month with LLMs.

Need more? Just \$6.90 for **Pro**, pay only for what you consume, NO commitment to recurring subscription fees! Plus, **each NEW device includes a FREE \$6.90 Pro package!** Top up as needed.

Want to avoid fees altogether? Choose **On-Premise**. Just deploy and use with no additional costs!

For more information please refer to [Price Description page](#).

Product Gallery



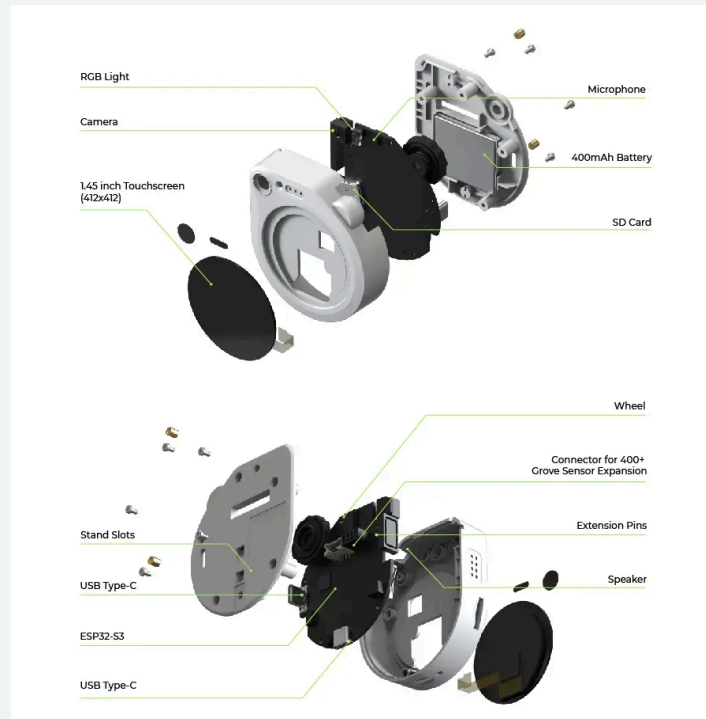


Specification

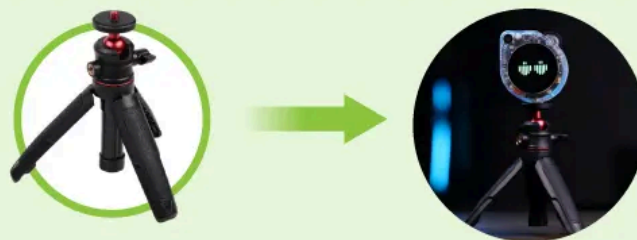
MCU	ESP32-S3 @240MHz 8MB PSRAM
Built-in AI Processor	Himax HX6538 (Cortex M55 + Ethos-U55)
Camera	OV5647 120° FOV Fixed Focal 3 meters
Wi-Fi	IEEE 802.11b/g/n-compliant 2.4GHz Band Wireless Range: Up to 100 meters (open space test)
Bluetooth LE	Bluetooth 5

Antenna	Built-in Wi-Fi and BLE antenna
Display	Touchscreen with 1.45-inch, 412×412 resolution
Microphone	Single microphone
Speaker	1W speaker output
Wheel	Supports scrolling up&down and button
LED	1xRGB light for indication
microSD Card Slot	Supports up to 32GB FAT32 microSD card
Flash	32MB Flash for ESP32-S3 16MB Flash for Himax HX6538
Extension Interface	1xGrove IIC interface 2x4 Female header(1xIIC, 2xGPIO, 2xGND, 1x3.3V_OUT, 1x5V_IN)
USB-C	1x USB-C on the back(power supply only) 1x USB-C on the bottom(power supply and programming)
Reset Button	1xRST button in the bottom hole
Power Supply	5V DC power
Battery	3.7V 400mAh Li-ion battery as backup power
Operating Temperature	0 ~ 45°C
Dimensions	69 x 65 x 20 mm
Mounting Bracket	Supports wall, desktop and bracket installation 1 x Universal wheel and base plate with adhesive 1 x 1/4" Female adapter set

Hardware Overview



Mini Tripod



360-Degree Rotating Stand [White] or [Clear]



Applications

- AI Pet Feeder
- Smart Home Control Panel
- Desktop Weather Station
- Retro Gaming Console
- Interactive Art Piece
- Educational Robot
- Voice Assistant
- Home Security Camera
- IoT Sensor Hub
- LLM-powered Desktop Companion
- AI Robot Head
- DIY AI Projects

Part List

Watcher	x1
Universal wheel and base plate with adhesive	x1
1/4" Female adapter set	x1
USB Type-C cable	x1
3*10mm screw	x2

Compliance & Logistics



HSCODE	9031809090
USHSCODE	9031808085
UPC	
EUHSCODE	8517180000
COO	CHINA

FCC Requirement

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

15.21

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy.

If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Resource Links

- <https://www.seeedstudio.com/SenseCAP-Watcher-W1-B-p-5980.html>
- [SenseCAP Watcher Brochure](#)
- [3D print your own sunflower stand for Watcher \(by Gokul\)](#)

Seeed Technology Co.,Ltd.
9F, Building G3, International E City,
Zhongshanyuan Road, Nanshan, Shenzhen, China

Tel: +86 0755-80695676
Web: www.seeed.cc
Shop: www.seeedstudio.com