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SENSECAP

SenseCAP A1101
LoRaWAN Vision AI Sensor

PRODUCT DESCRIPTION

SenseCAP A1101 - LoraWAN Vision AI Sensor is an image recognition AI sensor designed for developers. SenseCAP A1101 - LoRaWAN Vision AI Sensor combines TinyML AI technology and LoRaWAN long-range transmission to enable a low-power, high-performance AI device solution for both indoor and outdoor use.This sensor features Himax high-performance, low-power AI vision solution which supports the Google LiteRT (previously Tensorflow Lite) framework and multiple TinyML AI platforms.

FEATURES

- Ultra-Low Power and Powerful Himax Camara: 400Mhz DSP, Maximum camera frame rate 640*480*VGA 60 FPS, Local inferencing
- Low Power and Long Range Transmission: Down to 2.3uWh sleep mode power consumption, powered by Wio-E5 LoRaWAN Modules, transfers data up to miles
- High Data Security by Edge Computing: Local image inferencing and transfers the final result data to the Cloud, suitable for applications that require limited data transmission and high data privacy.
- Easy to Visualize Data: Few clicks to display and manage data via SenseCAP Mate App and SenseCAP Dashboard, wide compatibility with other third-party tools
- High Industrial Protection Grade: -40 ~ 85℃ operating temperature and IP66 rating, suitable for indoor and outdoor deployment
- Easy for Scalable Deployment: 1min to add and configure the device by scanning the device QR code, low LoRaWAN network cost and maintenance cost ensure business scalability.

APPLICATION

SenseCAP A1101 is a product that needs developers' secondary development in order to deploy in a real-world application, and it enables users:

- to test SenseCAP A1101 with the two demo models provided in the product (people detection, and meter recognition) and experience Vision AI application;
- to collect images using SenseCAP A1101 and generate a dataset through an annotate platform.
- to train and generate their own models through third-party AI training tools and deploy them to SenseCAP A1101;
- to cooperate with an AI industry partner on dataset generation, model training, algorithm developing, etc. to get customized and deployable models for specific application usages and deploy them in the SenseCAP A1101

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SPECIFICATIONS

PRODUCT MODEL

Model	A1101

GENERAL PARAMETER

Microcontroller	Wio-E5
Support Protocol	LoRaWAN v1.0.3 Class A
Built-in Bluetooth	App Tool to change parameters
LoRaWAN Channel Plan	IN865/EU868/US915/AU915/AS923/KR920/RU864
GPS	Need to customize
Max Transmitted Power	19dBm
Sensitivity	-136dBm@SF12 BW=125KHz
Communication Distance	2 to 10km (depending on gateway antenna and environments)
IP Rating	IP66
Operating Temperature	-40 to +85 °C
Operating Humidity	0 to 100 %RH (non-condensing)
Device Weight	280g
Certification	CE / FCC / RoHS

BATTERY

Battery Life	Varies depending on model and recognition wake frequency
Battery Capacity	19Ah (non-rechargeable)

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BATTERY

Battery Type	Standard D-size SOCl2 Battery

VISION AI

ML Framework	TensorFlow Lite/PyTorch
AI Hardware Acceleration	400Mhz DSP
Model Resolution	192*192 pixe

CAMERA

Field of view	Diagonal 82°
Camera Resolution	30W pixel