

**Product Code: 06**

**Product Name: AI and IoT convergence 2D training system**

**Brand: ZerOne**

**Model: ZT- IoT2D-2484**

**Origin: China (Assembly by BD)**



(Sample Picture)

**Features:**

Should be AI and IoT convergence training equipment using 2D model of living room of home.

Main module supporting AI acceleration calculation, multimedia and various IoT sensors should be integrated into the base board.

The main module should be selectable between a 128-core GPU supercomputer for edge devices or a Cortex-A72 quad-core processor with tensor processor unit.

Minimum 5-inch TFT LCD with 800x480 or higher resolution and Minimum 8M pixel high resolution camera.

Must provide Gigabit Ethernet, dual band Wi-Fi (2.4GHz, 5GHz) and Bluetooth 4.2 or 5.0

Digital microphones and speakers should support cloud-based speech recognition and audio playback.

Minimum 4 dedicated expansion interfaces support various IoT sensor modules.

Positioning sensors and actuators by creating 2D models of living rooms in real homes to increase attention.

Soda OS, the exclusive AIoT operating system, and Pop library

Interpreter-based C/C++ development environments optimized for beginners to program including Python 3.

**Software Specifications**

Soda OS: Linux Kernel: 4.19 ; Desktop: X-Server, Openbox, LightDM, Tint2, blueman, network-manager, conk ; CLI: Zsh, Tmux, Peco, powerlevel9k thema, Powerline fonts ; Tool Chain: GCC 9, JDK, Node JS, Python3, Clang ; IDE: Visual Studio Code, NeoVim, Geany ; Connectivity: Mosquitto (MQTT), Bluez, mtr, nmap, iptraf, Samba, Blynk Server, Remove Desktop Server

;Multimedia: portaudio, sox, OpenCV 4, snowboy, Google Assistant  
Data Science & AI: Python3, Numpy, Matplotlib, sympy, Pandas, Seaborn, Scipy, Gym Scikit-learn, Tensorflow, Kerast  
Pop Library:

Output Object (C/C++, Python3): Led, Laser, Buzzer, Relay, RGB Led, DC Motor, Step Motor, OLed, Piezo Buzzer, Pixel Display, Text LCD, FND, Led Bar.

Input Object (C/C++, Python3): Switch, Touch, Reed, LimitSwitch, Mercury, Knock, Tilt, Opto, Pir, Flame Line Trace, TempHumi, UltraSonic, Shock, Sound, Potentiometer, CdS, Soil Moisture, Thermistor, Temperature, Gas, Dust, Psd. Gesture.

Multimedia (Python3): Audio Play, Audio Play List, Audio Record, Tone, Sound Meter

Voice Assistant (Python3): GAssistant, create conversation stream.

AI (Python3): Linear Regression, Logistic Regression, Perceptron, ANN, DNN, CNN, DQN

**Hardware Specifications:**

**Main Module:**

CPU: 6-core NVIDIA Carmel ARM v8.2 64-bit; 6MB L2 + 4MB L3; Max Freq: 2-core@1900MHz, 4/6-core@1400Mhz ; GPU: 384-core NVIDIA Volta™ GPU with 48 Tensor Cores Max Freq: 1100MHz ; Memory: Minimum 8GB 128-bit LPDDR4x@ 1600MHz ; Video Encoder:

2x464MP/sec(HEVC),2x4k@30(HEVC); 6x 1080p@ 60(HEVC), 14x 1080p@ 30(HEVC) ; Video Decoder: 2x690MP/sec(HEVC), 2x4k@ 60(HEVC), 4x4k@30(HEVC); 12x1080p@ 60(HEVC), 32x 1080p@ 30(HEVC), 16x 1080p@30(H.264) ; CSI Camera: Up to 6 cameras (36 via virtual channels); 12 Lanes MIPI CSI-2, D-PHY 1.2 (up to 30 Gbps) ; Connectivity: Dual Band Wireless Wi-Fi 2GHz/5GHz Band, 867Mbps, 802.11ac; Bluetooth 4.2; 10/100/1000 Base-T Ethernet ; Display: 2 multi-mode DP 1.4/eDP 1.4/HDMI 2.0 ; USB: Min. 4x USB 3.0, Min. USB 2.0 Micro-B

**Base Board:**

Camera: Image Sensor: Sony IMX219 ; Resolution: Min. 8M Pixel Native Resolution Sensor (3280 x 2464 or higher Pixel Static Images) ; Video: 1080p30, 720p60 and 640x480p90 ; Linux

[ N.B: Product specifications are not fixed, product specifications may be changed as per brand models and others things.]