

NeuronBOT series

Rapid robotic development and demo kit based on ROS/ROS 2

Features

- Integrated vision, control, AI and motion modules
- Designed for rapid robotic development
- Supported by powerful open source ROS libraries and packages



Introduction

The NeuronBOT is an affordable, miniature autonomous robot platform with integrated computational power, LIDAR sensor, high payload capacity and dynamic motion ability, perfect for the enablement of many exciting research, training and educational activities.

Software Support

- Ubuntu 18.04 LTS
- Neuron SDK
- ROS/ROS 2
- Intel® Open VINO™

Ordering Information

- **NB-SK**
Advanced NeuronBOT Robotic development kit with Intel® Celeron®, 4G DRAMA, 64G SSD
- **NB-S**
Advanced NeuronBOT robotic development kit with Neuron Pi-SMARC series

Optional Accessories

- **Wireless Module**
Wi-Fi, (w/ antenna)
- **Battery**
- **Flat panel**
- **Front bracket**
- **Stand bracket**

Specifications

| Model Name | NB-SK | NB-S series |
|----------------------------------|--|--|
| Processor | Intel® Celeron® processors | Intel Atom® x5-E3930 |
| GPU | None | Intel® Movidius™ Myriad™ X |
| Memory | 4G DDR | 8GB LPDDR4 |
| IMU | | GY85 ADXL345 |
| MCU | | Arduino mega |
| Encoder | | 7N14P 2Channl |
| Main Board I/O Interface | | |
| Display | 1x HDMI | 1x HDMI |
| Ethernet | 2x Intel GbE | 1x GbE |
| Series Port | 1x RS-232/422/485 via onboard header 3x RS-232 via onboard headers | None |
| USB 3.0 | 4x USB 3.0 on rear I/O 2x USB 3.0 onboard header 1x USB 3.0 on vertical connector | 2x USB 3.0 |
| USB 2.0 | 4x USB 2.0 on rear I/O | 2x USB 2.0 |
| GPIO | 10x GPIO via onboard feature connector, I ² C | MRAA compliant 40 pin connector (GPIO, PWM, I ² C, UART) |
| Mini-PCIe | | 2x full size (one for CAN, one for WiFi or LTE) |
| Expansion slots | 1x PCIe x16 Gen 3 1x PCIe x1 Gen 2 1x Mini PCIe(full size) supporting PCIe+USB or mSATA 1x Mini PCIe(half size) supporting PCIe+USB | None |
| Storage Devices | | |
| SATA | 64GB | 32GB eMMC, 1x microSD slot |
| Laser distance sensor | | |
| LDS | | 360° RPLidar A1 |
| Height | | 230 +/- 10 mm |
| LED indicator | | |
| Status LED (Front) | | Red & Blue I/O |
| Power Requirements | | |
| Power ON/OFF switch | | 1x Power ON/OFF button |
| Main Board DC power supply Input | 12V DC +/- 5% with ATX power connector | 12 VDC via power jack (2A is recommended) |
| Battery (Optional Accessory) | | Optional: 11.1V 3S 35° 2600mAh |
| Mechanical | | |
| Payload | | 3kg |
| Wheel diameter | | 83 +/-2 mm |
| Wheel center distance | | 218 +/-3 mm |
| Translational Velocity MAX | | 0.6m/s |
| Rotational Velocity MAX | | 0.6m/s |
| Threshold of climbing | | 0 +/- 1° deg |
| Dimensions | | 260 x 270 x 260 mm (10.24 x 10.63 x 10.24 inch) |
| Weight | | 8.3kg |
| Environmental | | |
| Operating Temperature | 0°~60°C (32°F~140°F) | 0°~60°C (32°F~140°F) |
| Operating Humidity | 10%~90%, non-condensing | 10%~90%, non-condensing |
| Storage Temperature | -20~80°C (-4°F~176°F) | -20~80°C (-4°F~176°F) |
| EMC | CE, FCC class B | FCC/CE |
| Software | | |
| SDK | | Neuron SDK |
| Environment | | Ubuntu 18.04 LTS |
| Middleware | | ROS/ROS 2 Intel® OpenVINO™ |