

# 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 Series is an affordable, miniature, autonomous robot development platform with integrated computational unit, LIDAR sensor, high payload capacity and dynamic motion capability, and is perfect for enabling a wide range of exciting research, training and educational activities.

## Software Support

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

## Ordering Information

- **NB-SK**  
Advanced NeuronBot Robotic Development Kit with Intel® Celeron® processor, 4G DRAM, 64G SSD

## Optional Accessories

- Flat panel
- Front bracket for Intel® RealSense™ depth camera D435
- Side Stand bracket for Intel® RealSense™ depth camera D435

## Recommended Accessories

- 22.2V/3300mAh LiPo Battery with XT60 Plug
- LiPo Battery balance charger
- Intel® RealSense™ depth camera D435

# Specifications

Model Name	NB-SK
Processor	Intel® Celeron® G3900TE processor
Memory	4G DDR
IMU	GY85 9-axis IMU 3-axis Gyroscope, 3-axis Accelerometer, 3-axis Magnetometer
MCU	Arduino Mega 2560
Encoder	7N14P 2-channel for Motor control
<b>Main Board I/O Interface</b>	
Display	1x HDMI
Ethernet	2x GbE
Series Port	1x RS-232/422/485, 3x RS-232 via onboard headers
USB 3.0	4x USB 3.0 on rear I/O 2x USB 3.0 onboard header 1x USB 3.0 on vertical connector
USB 2.0	4x USB 2.0 on rear I/O
GPIO	10x GPIO via onboard feature connector, I <sup>2</sup> C
<b>Storage Devices</b>	
SATA	64GB
<b>Laser distance sensor</b>	
LDS	2D 360° RPLidar A1, 12 meter
Sample Frequency	8000Hz
Scan Rate Range	1-10Hz, Typical:5.5Hz
Communication Interface	USB/UART
<b>Front Side</b>	
Status LEDs (Front)	Red: Stop Blue: Tracking Purple: Charging OFF: Shut down
Camera Area	For Intel® RealSense™ depth camera D435 (Need optional accessory - Side Stand bracket for install)
<b>Rear Side</b>	
Battery Panel	battery status display
Power Button	Power ON/OFF button
GPIO	1x GPIO connector (See the detail information on the user's manual)
USB Connector	For External Wi-Fi dongle or HD
HDMI Connector	For External display panel
<b>Power Requirements</b>	
Power Switch	1x power button
Main Board	12V DC ±5% with ATX power connector
DC Input	
Battery	Recommended Accessories
<b>Mechanical</b>	
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
Actuator	DC Carbon-brush motor 1/139
Dimensions	260 x 270 x 260 mm (10.24 x 10.63 x 10.24 inches)
Weight	8.3kg
<b>Environmental</b>	
Operating Temperature	0°C to 50°C (32°F to 122°F)
Operating Humidity	10%~95%, non-condensing
Storage Temperature	-20°C to 80°C (-4°F to 176°F)
EMC	Compliant with CE, FCC Class B
Vibration	Package random vibration: IEC 60068-2-64, 5-500Hz, 5Grms, 60 min/axis
Drop	ISTA-1A
<b>Software</b>	
SDK	Neuron SDK
Environment	Ubuntu 18.04 LTS
Middleware	ROS/ROS 2 Intel® OpenVINO™