**Product Brief**

**Intel® Neural Compute Stick 2**

High performance, Low Power for AI Inference

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**Introduction**

Bringing computer vision and AI to your IoT and edge device prototypes are now easier than ever with enhanced capabilities of the Intel® Neural Compute Stick 2 (Intel® NCS2).

Whether you’re developing a smart camera, a drone with gesture-recognition capabilities, an industrial robot, or the next, must-have smart home device, the Intel® NCS2 offers what you need to prototype smarter.

What looks like a standard USB thumb drive hides much more inside. It’s built on the latest Intel® Movidius™ Myriad™ X VPU which features the neural compute engine—a dedicated hardware accelerator for deep neural network inferences. With more compute cores than the original version and access to the Intel® Distribution of OpenVINO™ toolkit, the Intel® NCS2 delivers 8X* performance boost over the previous generation.¹

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**Product features**

- Powered by Intel® Movidius™ Myriad™ X Vision Processing Unit
- Up to 8X* the performance of Intel® Movidius™ Neural Compute Stick
- Supported by the Intel® Distribution of OpenVINO™ toolkit
- Real-time, on device inference - cloud connectivity not required
- Run multiple devices on the same platform to scale performance

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**Where to buy**

Purchase your Intel® Neural Compute Stick 2 from one of our trusted partners at: [Where to Buy](http://intel.com/ncs)
Vision Processing Unit Architecture
Intel® Movidius™ Myriad™ X VPU

An entirely new deep neural network (DNN) inferencing engine that offers flexible interconnect and ease of configuration for on-device DNNs and computer vision applications

Intel® Distribution of OpenVINO™ toolkit
The Intel Distribution of OpenVINO™ toolkit is the default software development kit¹ to optimize performance, integrate deep learning inference, and run deep neural networks (DNN) on Intel® Movidius™ Vision Processing Units (VPU).

Download
Open Source GitHub Repo

Pretrained models
The Intel® Distribution of OpenVINO™ toolkit includes two sets of optimized models that can expedite development and improve image processing pipelines for Intel® processors. Use these models for development and production deployment without the need to search for or to train your own models.

Full list of models at: Pretrained Models

Reference Implementations
Open-sourced reference implementations to quickly deploy with pre-built projects

Intruder Detector
Build an application that alerts you when someone enters a restricted area. Learn how to use models for multiclass object detection.

Restricted Zone Notifier
Secure work areas and send alerts if someone enters the restricted space.

Store Traffic Monitor
Monitor three different streams of video that count people inside and outside of a facility. This application also counts product inventory.

Shopper Gaze Monitor
Build a solution to analyze customer expressions and reactions to product advertising collateral that is positioned on retail shelves.

Parking Lot Tracker
Receive or post information on available parking spaces by tracking how many vehicles enter and exit a parking lot.

Machine Operator Monitor
Send notifications when an employee appears to be distracted when operating machinery.

View all reference implementations
Projects

AI has the power to save lives, protect the environment, and change the world. Start your AI at the edge development today.

Smart Shopping Cart
Gives off-line retailers additional opportunities to advertise products in a fashion similar to online sellers (i.e., Based on the products already placed in a shopping cart).

3D Printing Error Detection
Offline analysis is accomplished with a digital microscope connected to a laptop running Ubuntu* and the Intel® Neural Compute Stick 2. After analysis, contamination sites are marked on a map in real time.

Technical Specifications

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<tr>
<th>Specifications</th>
<th>Intel® Neural Compute Stick 2</th>
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<tr>
<td>Vision Processing Unit (VPU)</td>
<td>The Intel® Movidius™ Myriad™ X VPU</td>
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<td>Software development kit</td>
<td>Intel® Distribution of OpenVINO™ toolkit</td>
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<tr>
<td>Operating Systems support</td>
<td>Ubuntu* 16.04.3 LTS (64 bit), Windows® 10 (64 bit), CentOS* 7.4 (64 bit), Raspbian*, and other via the open-source distribution of OpenVINO™</td>
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<td>Supported framework</td>
<td>TensorFlow*, Caffe*, MXNet*, ONNX*, and PyTorch* / PaddlePaddle* via ONNX* conversion</td>
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<tr>
<td>Connectivity</td>
<td>USB 3.1 Type-A, USB 2.0 Type-A</td>
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<tr>
<td>Dimensions</td>
<td>72.5mm X 27mm X 14mm</td>
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<tr>
<td>Operating temperature</td>
<td>0° - 40° C</td>
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<tr>
<td>Material Master Number</td>
<td>964486</td>
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<tr>
<td>MSRP</td>
<td>$69 USD as of July 14, 2019</td>
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<tr>
<td>Supported platforms</td>
<td>x86_64, ARM</td>
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Additional Resources

- Getting Started
- Forum
- Tutorials

*Other names and brands may be claimed as the property of others.