SYNTIANT

DESIGNED BY AVNET

RA Ecosystem Partner Solution

RASynBoard

Solution Summary

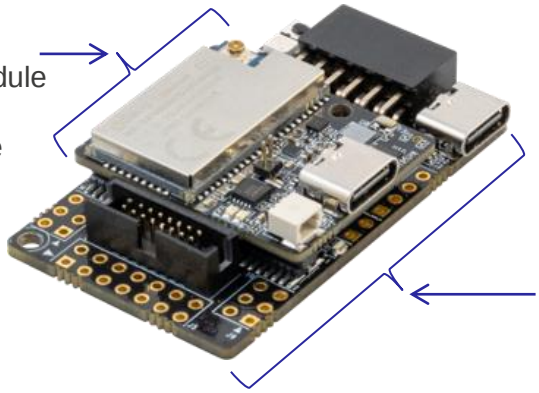
RASynBoard is a tiny (25 x 30 mm), ultra-low-power, edge AI / ML board, based on Syntiant's NDP120 Neural Decision Processor, Renesas' RA6M4 host MCU, DA16600 Wi-Fi / Bluetooth combo module. An onboard digital microphone, IMU motion sensor and SPI Flash memory allow running highly efficient AI models using acoustic and motion sensor data. For further flexibility, a battery and USB Type-C device connectors facilitate stand-alone use, while a compact under-board connector enables integration with custom OEM boards and additional sensors. This solution was developed in conjunction with Avnet, please contact Avnet for purchasing and customer support of the board,

Features/Benefits

- Uses power-efficient AI / ML to improve reliability, accuracy, performance and efficiency
- Tiny, battery-powered, wireless-connected (WiFi / BLE) smart sensor sub-system
- Flexible low-power development platform, with solution-ready Core Board and development-ready Expansion IO Board

Diagrams/Graphics

Core Board
- Solution-ready
- RA6M4 MCU
- NDP120 NPU
- DA16600 WiFi / BLE module
- ICM-42670-P IMU
- T5838 digital microphone
- SPI Flash
- 30 x 25 mm



Expansion IO Board
- Development-ready
- Onboard MCU debugger
- 56-pin board-to-board connector
- Pmod, Click, USB & custom wired I/O for external sensors
- Micro SD card for extra storage
- 50 x 30 mm

Target Markets and Applications

- Accelerated edge AI and ML devices
- Industrial smart sensors
- Smart factory
- Motor predictive maintenance
- Always-on sound detection and sensor fusion

https://www.avnet.me/rasynboard

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SYNTIANT®

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Always-On Voice
powered by custom AI Silicon

The Syntiant® NDP120™ is a special purpose edge AI processor for always-on image, speech, audio and sensor applications. The NDP120 applies neural processing to run multiple applications simultaneously with minimal power consumption. Built using the Syntiant Core 2™ programmable deep learning architecture, NDP120 is designed to natively run multiple Deep Neural Networks (DNN) on a variety of architectures, such as CNNs, RNNs and fully connected networks.

NDP120 Neural Decision Processor™

Neural Processing
Second generation Syntiant Core 2 supports energy efficient inference and delivers 25x the tensor throughput compared to NDP100/101

Ease of Use
Flexible methods to access neural processing engine where neural designers have full control of network configurations

Multi-sensor fusion
PDM, SPI, I2S and I2C interfaces for microphone and sensor applications

Multi-feature
Concurrent neural networks to run multiple applications simultaneously with minimal power consumption

Audio Processing
DNN + DSP support both machine learning and traditional audio and voice algorithms

Company Name	Syntiant Corp
Headquarter Address	7555 Irvine Center Drive Suite 200 Irvine, CA 92618 United States
Date of Succession	April 2017
President and CEO	Kurt Busch
Business Description	Syntiant's end-to-end deep learning solutions bring a highly accurate, ultra-low-power AI interface to always-on image, voice, audio and sensor applications. Syntiant's Neural Decision Processors™ (NDPs) are being designed into earbuds, wearables, smart speakers, mobile phones, heath monitoring devices, laptops, monitors and automobiles, as well as other consumer and industrial devices.
Common Stock	Syntiant is a private company.
Investors	Microsoft M12, Intel Capital, Bosch Ventures, Amazon Alexa Fund, Applied Ventures, Atlantic Bridge Ventures, Renesas & other leading investors.
Number of Employees	80-100
Web site	https://www.syntiant.com/

https://www.syntiant.com/ndp120