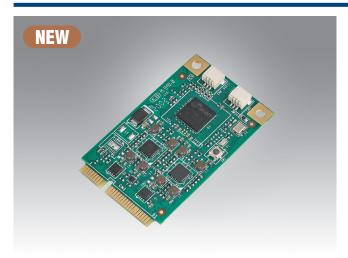# VEGA-230

Kneron KL520 Edge AI Module

NEW

Features

- Kneron KL520 NPU onboard
- Mini PCI-E card (USB2.0 interface, full size)
- Accelerator for Edge AI solution
- Maximize power efficiency and performance
- Supports wide AI frameworks and CNN* models

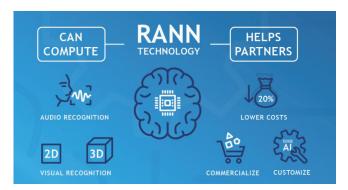*Convolutional Neural Network (CNN)

CE FCC

Introduction

Advantech has collaborated with Kneron to deliver modules featuring their innovative AI edge computing processor. The KL520 NPU (Neural Processor Unit) with its dual ARM Cortex M4 CPU can operate as a host or companion AI co-processor enabling edge AI on devices like smart locks, security cameras, drones, smart home appliances, and robotics. It is compatible with various 3D sensor technologies such as Structured Light, dual-cameras, ToF camera, and Kneron's own exclusive 3D sensing technology. Advantech VEGA-230 is compatible with all of EI/EIS/AIR solutions platform which support mPCIe modules. The VEGA-230 offers the best in performance, efficiency, and cost effectiveness.

Specifications

	VEGA-230-01A1
SoC	Kneron KL520
Form Factor	Full size Mini PCIe
Dimensions	30 x 50.95 x 4.80 mm
Signal Interface	USB 2.0
Operating Temp.	0°C ~ 70°C
Power Consumption	0.5W
Cooling	Passive Cooling
NPU Performance	0.35 TOPS
AI Framework Support	ONNX, TensorFlow, Keras, Caffe, PyTorch
CNN Model Support	ResNet, GoogleNet, VGG16, LeNet, MobileNet, DenseNet, YOLO, Tiny YOLO, and more

Reconfigurable Solutions

Most AI models are limited to specific applications and frameworks. Kneron's Reconfigurable Artificial Neural Network (RANN) technology adapts in real-time to audio, 2D, or 3D recognition applications while also being compatible with mainstream AI frameworks and convolutional neural network (CNN) models.
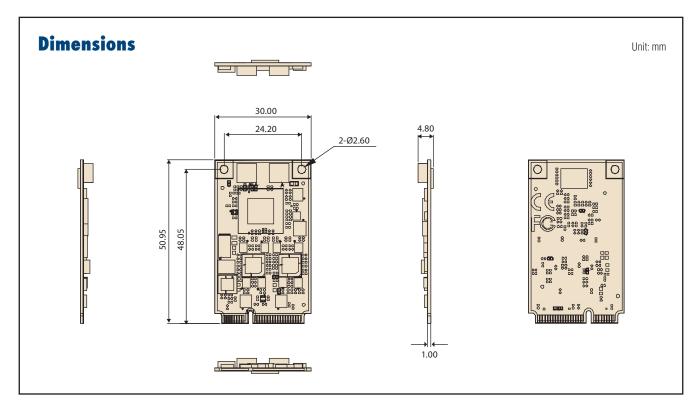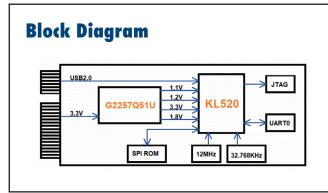
RANN Technology can:

- Compute audio and images including 2D/3D visual recognition
- Support AI frameworks: ONNX, TensorFlow, Keras, Caffe, PyTorch
- Support CNN models: ResNet, GoogleNet, VGG16, LeNet, MobileNet, DenseNet, YOLO, Tiny YOLO, and more

RANN Technology helps partners:

- Lower costs by up to 20%
- Create commercial applications
- Customize edge AI to fit unique use cases

Dimensions

Unit: mm

Block Diagram

Ordering Information

Part Number	Description
VEGA-230-01A1	Full size miniPCIe Edge AI acceleration module with Kneron KL520

Packing List

Part Number	Description
VEGA-230-01A1	1 x VEGA-230 Module 1 x M3 screw