NEUROSTAMP

AI MODULE FOR REAL-TIME LEARNING AND RECOGNITION

NeuroMem Smart!

20 mm - 7/8 inch

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Flexible comm port (SPI, I2C)

Lattice FPGA X03

7 NM500 chips
totaling 4032 neurons

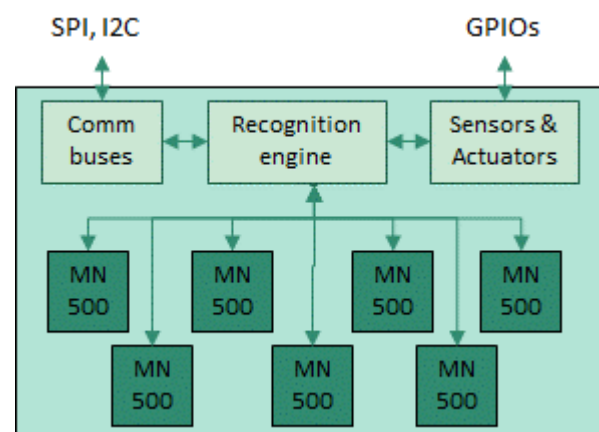GPIOs for Video or Sensor input

The NeuroStamp features a bank of 7 NM500 chips totaling 4032 neurons ready to learn and recognize patterns extracted from images, audio waveform, bio signals, text and more, with orders of magnitude less energy and complexity than modern microprocessors.

By default, the neurons are accessed through simple SPI protocol, but additional communication and processing logic can be loaded in the FPGA connecting all the neurons in parallel.

A trainable neural network made simple

- Powerful classifier (RBF and KNN)
- Real-Time Life Long Learning
- Pattern recognition accelerator
- Simple API to train and recognize patterns
- Data, signal and image analytics
- Configurable communication and GPIOs
- Easy to solder (manual or automated soldering)
- Low power component

SPI, I2C   GPIOs

Comm buses   Recognition engine   Sensors & Actuators

MN 500   MN 500   MN 500   MN 500

MN 500   MN 500   MN 500

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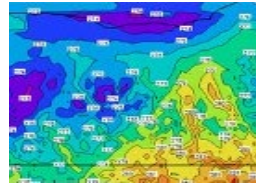
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Numerous Applications

Image recognition
Industrial inspection,
Target tracking,
People identification,
Medical imaging…

Signal recognition
Speech, Voice,
Audio,
Biosensors
Sonar, Radar…

Fingerprint and iris,
DNA, genomics,
Meteorology, Physics,
Environmental Sciences…

Text and Packets
Cyber security
Sentiment analytics,
Social networking,
Text analytics…

Numerous configuration

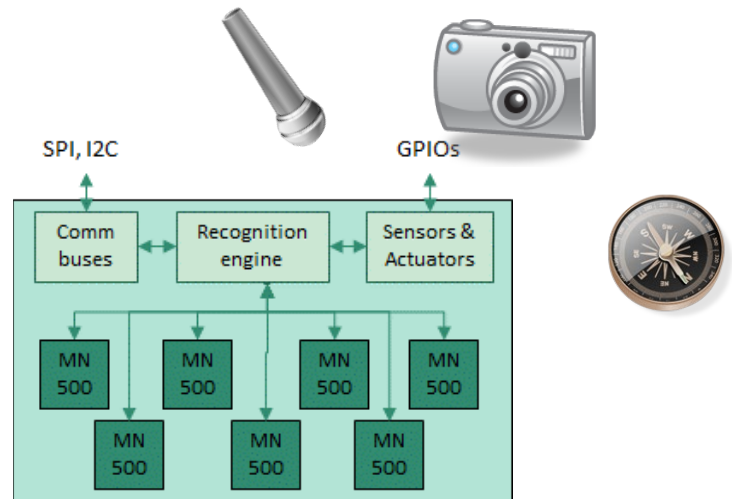### NEURONS "A LA MODE" FOR THE IOT

Network of 4032 neurons
- Real-time KNN and RBF classification
- Real-time life long learning
- Deterministic latencies

Configurable comm buses
- SPI (default)
- I2C, USB, etc.

Configurable engines and GPIOs
- Digital video bus
- Sensor inputs
- Actuators

NEURONS "A GO GO" FOR ANALYTICS

Expand the NeuroMem network to 8064 neurons or more
Easy interconnect of multiple NeuroStamps through the NeuroMem bus