



# NXP Mobile Robotics

**NavQ95 RevB vehicle computer,  
based on NXP i.MX 95**

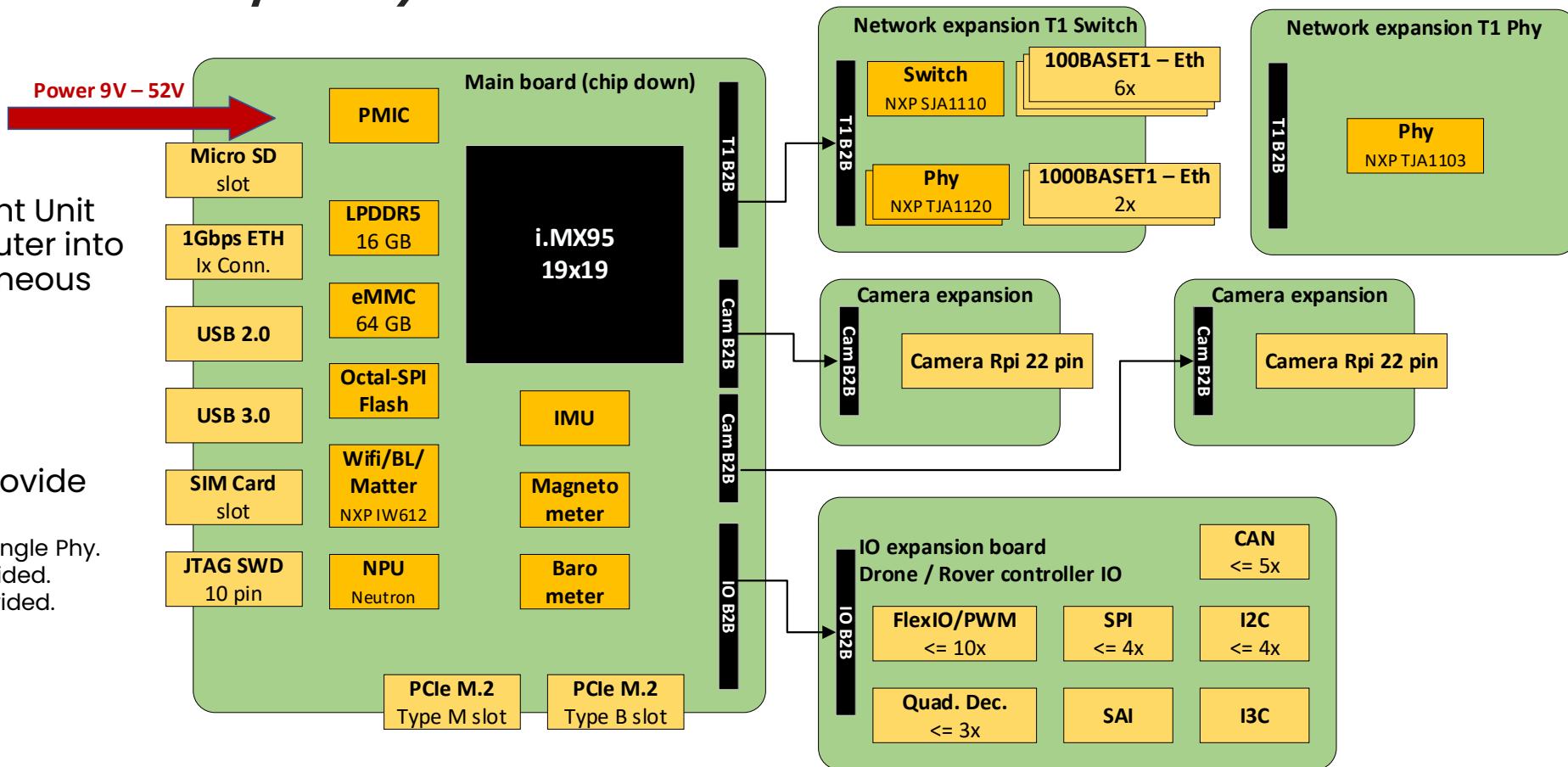
**Proof of concept NavQ95 RevB running  
Zephyr / ROS2 / Cognipilot or  
Nuttx / PX4 opensource software**

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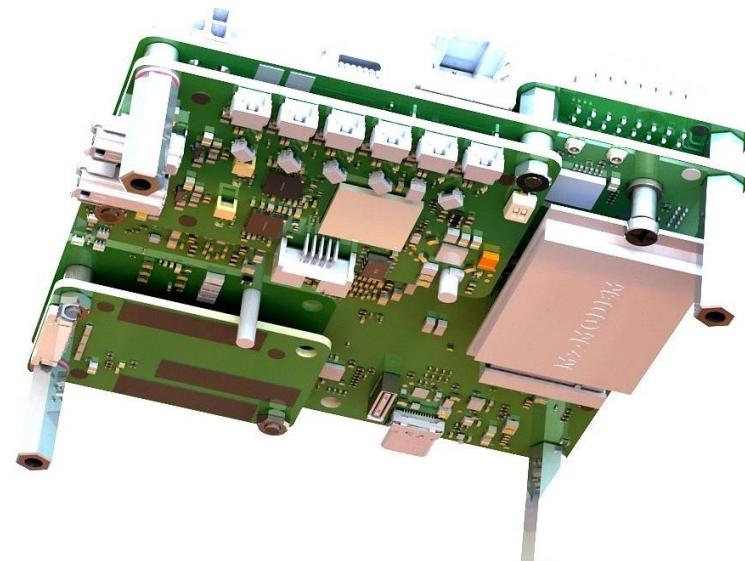
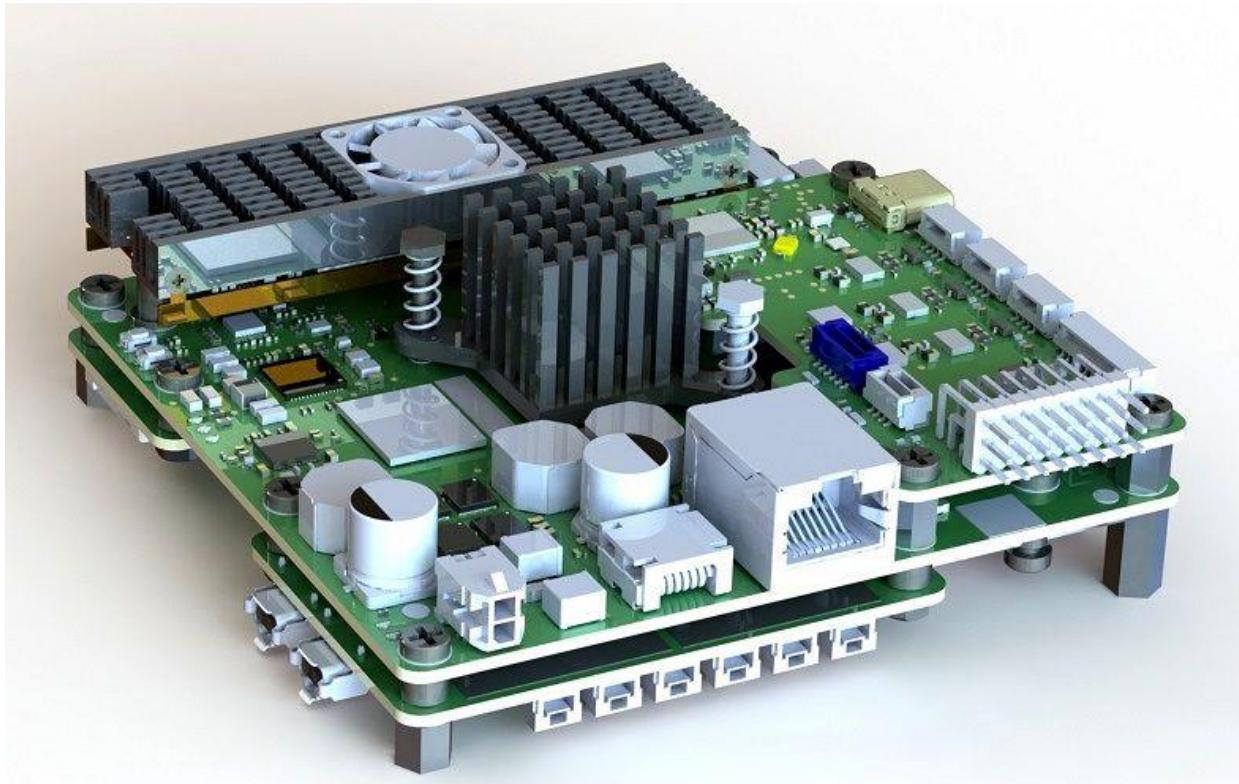
# NavQ95 RevB *Proof of concept only*

- Combining Vehicle Management Unit and Vehicle Companion Computer into 1 Vehicle Computer, a heterogeneous MCU/MPU combination.
- Single main board:
  - Small form factor, ready to use.
  - Low cost.
- Multiple expansion boards to provide flexibility in:
  - Network capabilities: T1 Switch or T1 Single Phy.
  - Camera connections: Rpi 22 pin provided.
  - IO connections: Drone / Rover IO provided.
- Running opensource software:
  - Zephyr, Ubuntu, ROS2 & Cognipilot
  - Nuttx & PX4



# NavQ95 RevB *Proof of concept only*

- The heterogeneous vehicle computer is based on:
  - 6x Arm Cortex-A55 cores, to execute compute intense functions.
  - 1x Arm Cortex-M7 core, to execute real-time control.
  - 1x Arm Cortex-M33 core, to execute NXP System Manager.
- Mobile robotics interfaces, using DroneCode connectors:
  - CAN/CAN-FD.
  - 1 Gbps ethernet (RJ45), with Precision Time Protocol (PTP).
  - 100BaseT1 and 1000BaseT1 Automotive ethernet (PTP).
  - PWM headers.
  - Camera connectors, CSI/DSI 22 pin Rpi.
  - GPS connector.
- High bandwidth M.2 PCIe interfaces, targeting:
  - Kinara ARA-2 NPU.
  - Cellular modem.
  - Storage (SSD).
- Onboard mobile robotics sensors:
  - IMU.
  - Magnetometer.
  - Barometer.
- AI capabilities:
  - On-chip NXP Neutron NPU.
  - Possibility to connect up to 3 NXP Kinara ARA-2 NPUs.
  - Cloud based AI through Wifi6 or 5G connectivity.
- Software:
  - Zephyr / Cognipilot or Nuttx / PX4 running on M7 core.
  - Ubuntu 24.04 with ROS2 Jazzy running on A55 cores.
  - High speed inter core communication using shared memory / RpMsg.
- Other:
  - Battery voltage between 9V and 52V, accommodating 12-S batteries.
  - Quality components that can be readily sourced, also in western markets.





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