MR-HGK-RT Unmanned Aerial Vehicle Robotics Reference Design
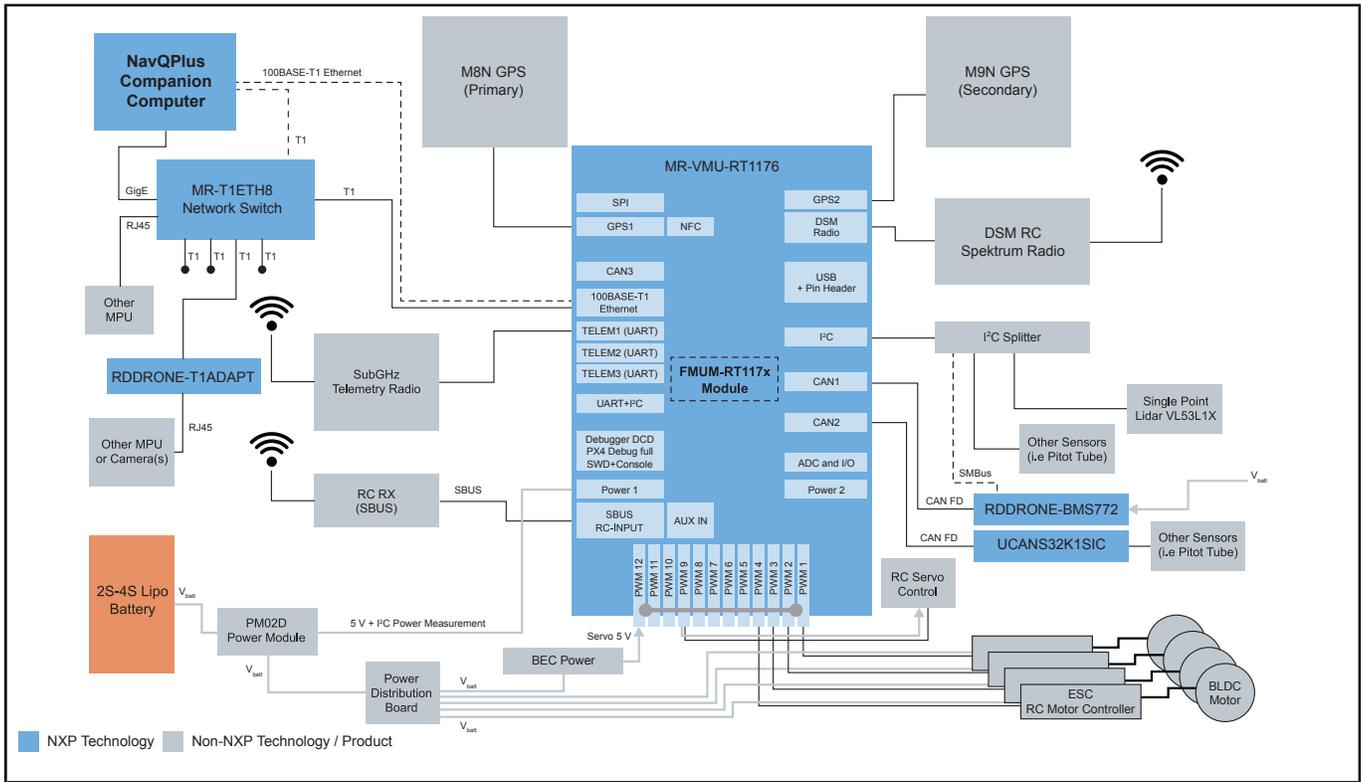
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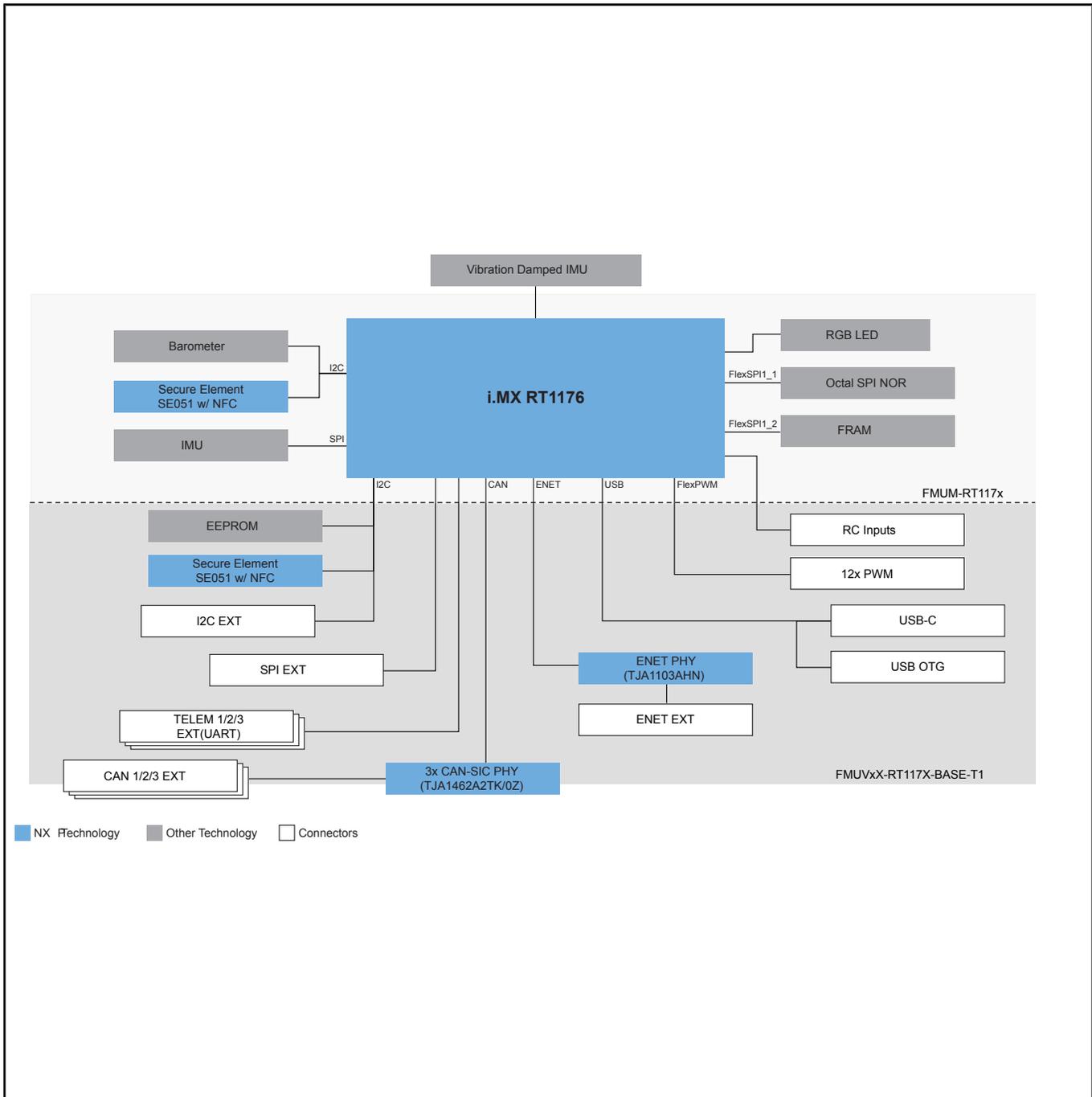
Last Updated: Feb 27, 2026

The MR-HGK-RT NXPHoverGames Kit UAV Robotics Reference Design combines the MR-VMU-RT1176 real-time vehicle management unit with modular hardware to self-assemble a drone. It supports the PX4 flight stack, Zephyr RTOS and Cognipilot, enabling flexible development in control, communications and autonomous systems. The platform integrates BLDC motor controllers, power distribution, networking and expansion support for components like NavQPlus, RTK-GPS and telemetry radios. This design accelerates prototyping for UAVs and robotic systems.

Drone System Block Diagram

Real-Time Vehicle Management Unit Block Diagram

Vibration Damped IMU

Barometer

Secure Element
SE051 w/ NFC

IMU

i.MX RT1176

RGB LED

Octal SPI NOR

FRAM

I2C

SPI

FlexSPI1_1

FlexSPI1_2

I2C CAN ENET USB FlexPWM

FMUM-RT117x

EEPROM

Secure Element
SE051 w/ NFC

I2C EXT

SPI EXT

TELEM 1/2/3
EXT(UART)

CAN 1/2/3 EXT

3x CAN-SIC PHY
(TJA1462A2TK/0Z)

ENET PHY
(TJA1103AHN)

ENET EXT

RC Inputs

12x PWM

USB-C

USB OTG

FMUVxX-RT117X-BASE-T1

NX Technology   Other Technology   Connectors

View additional information for MR-HGK-RT Unmanned Aerial Vehicle Robotics Reference Design.

Note: The information on this document is subject to change without notice.