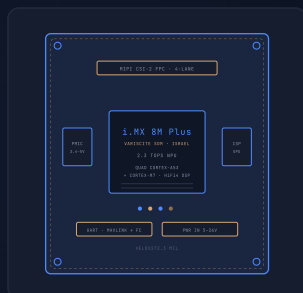


Velox2T2.3

AT A GLANCE

Mil · Group 1 UAS — terminal vision-guidance board

2.3 TOPS · 1.5–6 W · <50 g · <70×50 mm



A **minimal carrier board** pairing a compact NXP i.MX 8M Plus edge-AI System-on-Module — **manufactured in Israel by Variscite** — with a forward-looking camera and a flight controller, built for **low-SWaP-C Group 1 UAS**. It runs quantized vision models (YOLO / IBVS) for “**last 100 m**” **terminal guidance**, converting bounding-box error into MAVLink commands over UART. Few connectors, low cost, and a clear dev-kit-to-production path.

🛡️ < \$200 TARGET · GSA / TAA DESIGNATED-COUNTRY SOURCING

SPECIFICATIONS

COMPUTE

2.3 TOPS

NPU on i.MX 8M Plus. Quad Cortex-A53 (1.8 GHz) + Cortex-M7 + HiFi4 DSP + ISP.

POWER (MODULE)

1.5–6 W

~1.5 W idle; ~4–6 W under AI inference. Suspend ~0.1 W.

MASS · FOOTPRINT

<50 g

Target <70×50 mm (carrier + SOM). Excludes camera / enclosure.

VISION

2× CSI-2

Dual 4-lane MIPI CSI-2 with ISP. RGB, low-light (IMX415/585), FLIR / thermal.

GUIDANCE LINK

MAV Link

Bidirectional UART up to 5 Mbps to the flight controller.

OPERATING RANGE

–40/+85 °C

Industrial grade. Vibration-tolerant for UAV operation.

ARCHITECTURE & I/O

COMPUTE	NXP i.MX 8M Plus SOM · Quad Cortex-A53 (up to 1.8 GHz) + Cortex-M7 · HiFi4 DSP · 2.3 TOPS NPU + ISP + GPU
SOURCING	SOM manufactured in Israel by Variscite (authorized NXP partner) Israel is a TAA designated country (FAR 25.003)
VISION	2× MIPI CSI-2 (4-lane, with ISP) RGB · low-light (Sony Starvis) · FLIR / thermal
GUIDANCE	UART MAVLink to flight controller (up to 5 Mbps) Bounding-box error → real-time guidance commands
POWER	5–26 V drone-bus input · regulated 3.4–5 V rail TVS · fuse · reverse-polarity protection
EXPANSION	GPIO · I ² C · SPI headroom · debug header / JTAG Status LEDs (power / boot / vision-lock / error)
SOFTWARE	Linux (Yocto / Debian) · NXP eIQ ML toolkit OpenCV · libcamera · TFLite / ONNX · MAVLink · FreeRTOS

WHY IT WINS

🎯 Purpose-built for last-100 m

The vision-AI guidance stack — camera pipeline, YOLO/IBVS inference, MAVLink out — is wired in, not bolted on. A general SBC leaves that integration to you.

🛡️ SWaP-C that fits Group 1

Under 50 g, ~1.5 W idle, and a sub-\$200 target. It sits where a Jetson-class board can't — on a small airframe, on a tight power budget, at attritable cost.

☰ Dev kit → production path

Prototype on the Variscite dev kit, then migrate to the minimal carrier for production-like testing. Carrier is iterable for camera, power rails, or added I/O.

CONFIGURATIONS

THIS SHEET

Velox2T2.3 · Mil

Minimal carrier + Variscite i.MX 8M Plus SOM. Group 1 terminal vision guidance. Target <70×50 mm, <50 g, <\$200 in volume.

PROTOTYPE PATH

Variscite dev kit

Validate YOLO loading, camera pipeline, and guidance logic on the full dev kit, then drop to the custom carrier for production.

FAMILY

Velox line

Entry-tier vision-guidance board. Steps up to the Velox2T100 (100 TOPS) flagship for higher-compute autonomous platforms.

PROCUREMENT POSTURE • GSA / TAA designated-country sourcing

- Israeli end product — FAR 25.003 / 52.225-3
- Industrial temp -40 / +85 °C
- Full BOM attestation under NDA

Target / planned values where noted (footprint, mass, power); power is module-level and AI-inference draw (~4–6 W) exceeds idle. TAA designation reflects stated SOM sourcing; end-product origin depends on point of substantial transformation. Full spec and test data under NDA.

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