

PRODUCT SHEET · 02

AKIZU Brain

Onboard video unit with proven frame age

Brain combines the ModalAI VOXL 2 computer and a 5G modem in a single sealed aluminium enclosure. On board, it encodes video using the VERA protocol, attaches the exposure time to each frame and sends it over the mobile network. The ground operator can always see the age of the image they are viewing.



15 TOPS

VOXL 2 AI performance (M)

5G

Sierra Wireless EM9291 (M)

240 fps

primary VERA profile (D)

≤ 50 ms

LET-1 target frame age (T)

Who it's for

Drone manufacturers and integrators who need remote video with verified frame age, without developing their own chain.

What it solves

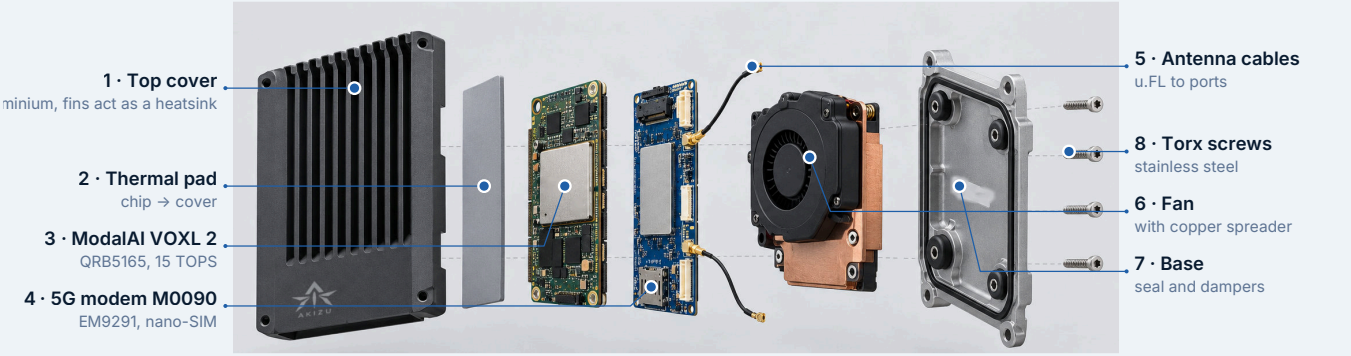
Stale video that looks live. Brain either proves the age of each frame or the cockpit rejects it and shows why.

Installation

Four M3 screws, one circular power and data connector, and two 5G antennas.



Inside



COMPUTE

Processor	Qualcomm QRB5165, 8 cores up to 3.091 GHz (M)
AI performance	15 TOPS (M)
Memory	8 GB LPDDR5 (M)
Camera inputs	up to 7 simultaneous via MIPI (M)
Sensors	TDK ICM-42688 IMU, ICP-10111 barometer (M)

CONNECTIVITY

Mobile network	5G, Sierra Wireless EM9291 on M0090 board (M)
SIM	nano-SIM (M), service access from the side (E)
Antennas	Pulse W3907 FPC antennas, 698–3600 MHz, depending on SKU (M)
Second network	Brain Duo: second modem, concept only for now (P)

VIDEO AND TIMING

Protocol	VERA, exposure time in every packet (D)
Profiles	240 fps primary, 120 backup, 480 research (D)
Target frame age	max ≤ 50 ms (LET-1), ≤ 25 ms (KVAL-1) (T)

MECHANICAL

Dimensions	~118 × 50 × 30 mm (E)
Weight	design target ≤ 150 g, unverified (T)
Material	6061 aluminium, hard anodised, bead-blasted (E)
Cooling	fins + 30 mm fan (E)
Ingress protection	IP54 design target, untested (T)
Power, temperature	to be determined by design and temperature testing (U)

Colours



Deep Navy



Light Grey

Variants

Brain 5G · one modem, one SIM.
Brain Duo · a concept with two modems for two operators; one modem cannot handle two networks simultaneously.

(I) measured internally · (M) stated by manufacturer (not verified by AKIZU) · (D) design · (T) target · (P) plan · (E) estimate · (U) unknown

Sources: ModalAI VOXL 2, 5G Modem datasheet, MDK-M0090. Images are visualisations. VOXL is a trademark of ModalAI, Inc.