UVS.Dynamics

DATASHEET

UVS Link

An encrypted digital video and telemetry link for UAVs, with an X-band air link and an airborne repeater — up to 50 km.

KEY FEATURES

- X-band air link (8–12 GHz), clear of the bands that EW targets en masse; frequency hopping keyed to the user
- The Repeater flies on its own drone, keeps line of sight to the aircraft and relays the encrypted stream without holding the video key
- Every packet encrypted and authenticated on board with the user's key; Secure Boot, flash encryption, signed updates only
- The Ground station only receives and emits nothing
- Video as a driverless USB webcam, and via RTP over Ethernet into Kropyva, DELTA or QGroundControl
- The link itself adds about 20 ms; four hours on the bench without a single dropped frame

SPECIFICATIONS

Architecture	Air (aircraft) → Repeater (airborne relay drone) → Ground (ground station); one-way, air-to-ground link
Air-link band	X-band, 8–12 GHz
Range	Air → Repeater: ≈18.5 km with 2 W (ground test), up to 40 km with 5 W · Repeater → Ground: ≈10 km more · whole link: up to 50 km
Amplifier	2 W or 5 W, separate module; monitors current, temperature and reflected power
Airborne antenna	Omnidirectional, ≈5 dBi, peak on the horizon; screws directly onto the SMA, no cable
Video	H.264, 720p at 30 fps
Link latency	≈20 ms from finished frame to Ground station output (bench median)
Stream protection	Per-packet encryption and authentication with the user's key, key-driven frequency hopping
Device protection	Secure Boot, flash encryption, JTAG disabled, signed updates only
Telemetry	MAVLink, MSP, CRSF (telemetry only), DisplayPort OSD — Betaflight, iNav, PX4, ArduPilot
Ground station outputs	USB-C (driverless UVC camera, telemetry) · Ethernet (RTP/UDP video, MAVLink over UDP)
Air module interfaces	MIPI CSI camera · USB-C for a USB camera or thermal imager · flight-controller UART · amplifier UART · RF output
Power input	12.5–25.2 V battery input via XT30
Status	Pre-series development — open to collaboration

COMPOSITION

Camera · Air module (video path and X-band converter on one board) · 2 W or 5 W amplifier · in-house antennas · Repeater on its own drone · Ground station · desktop application that configures the units and shows video and telemetry.

INTERFACES

Air: MIPI CSI camera, USB-C for a USB camera or thermal imager, flight-controller UART, amplifier UART, XT30 (12.5–25.2 V), RF output. Ground: USB-C (UVC video and telemetry), Ethernet (RTP video, MAVLink over UDP), XT30 (12.5–25.2 V).

AVAILABILITY Pre-series development: open to collaboration with military units and UAV manufacturers — we work out the integration into your aircraft together with your engineering team. Get in touch through the form at uvsdynamics.com.

ТОВ «ЮВС Дайнемікс» / UVS Dynamics LLC
Pre-series; specifications subject to change.