



Smartplane

Development and manufacturing
of industrial UAVs in Kazakhstan

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About our company

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What we do

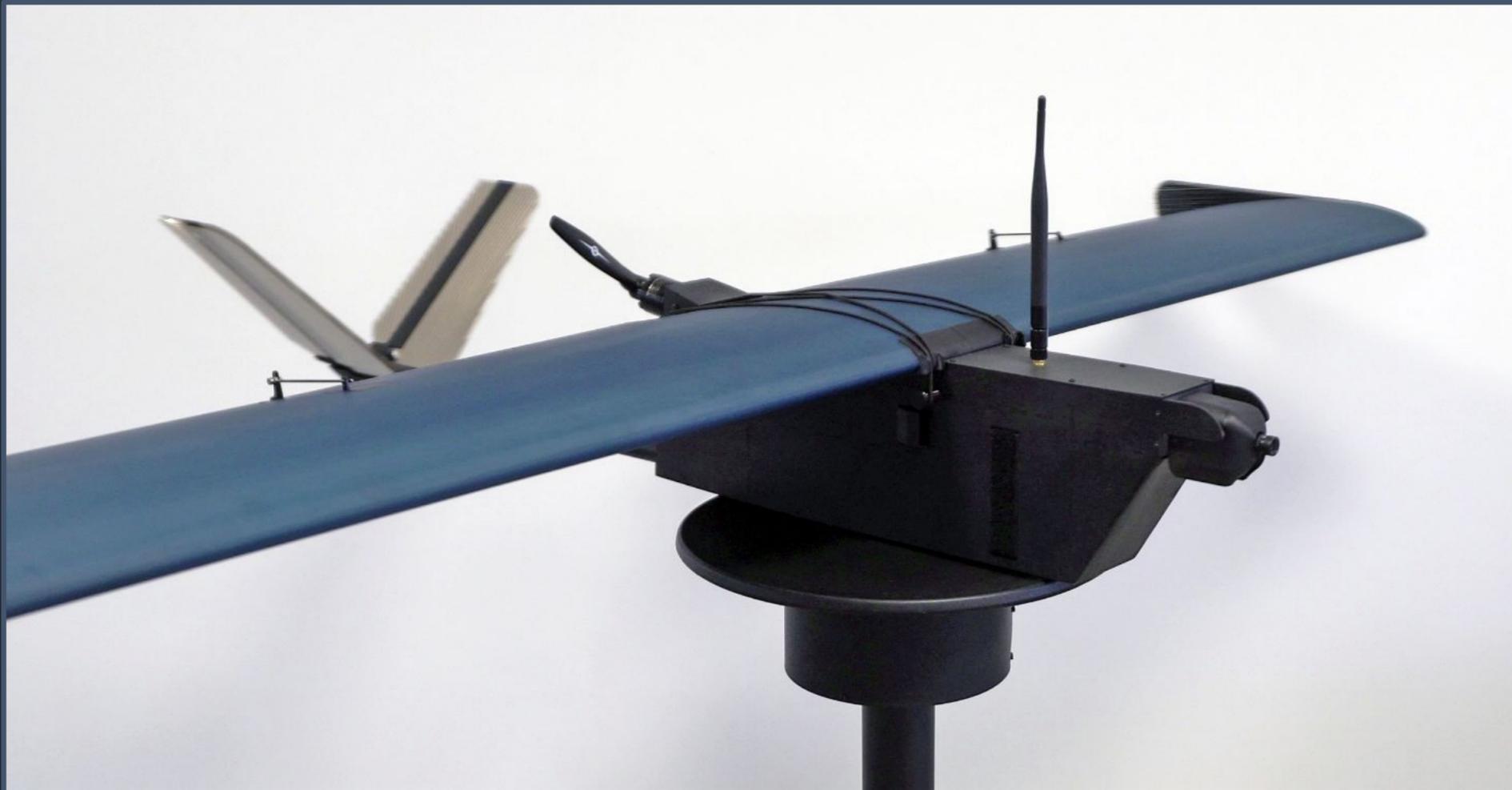
Development and manufacturing of unmanned aircraft, telemetry systems, custom payloads, electronics and software

Smartplane has its own 1200 square meter manufacturing facility located in Almaty, Kazakhstan

Our team includes a full range of experienced professionals designing and producing various UAVs since 2014



Smartplane XV



- HD video transmission up to 50 km
- Flight up to 100 km, 90 - 120 min in the air
- Wingspan 1600 mm, weight 3.5 kg
- Takeoff from hand, landing on fuselage
- Ground unit with tracking antenna
- Mass production technology
- Availability and ease of use
- Optimal performance for \$\$\$
- Budget civilian chips from PRC
- Full autopilot, cruise flight mode

Applications

- Security and patrol
- Search and rescue operations
- Emergencies
- Aerial photography
- Monitoring of nature reserves
- Crowd monitoring
- Special vehicle companion

Gyro: 2 axis

Camera: 16MP RGB

Battery: 24V 300Wh

Wing: foam, moisture resistant fabric

V-Tail



Smartplane XM



- HD video transmission up to 15 km
- Flight up to 25 km, 30 - 45 min in the air
- Frame 330 mm, weight 1.8 kg
- Data stream encryption
- Directional antenna on GCS unit
- Mass production technology
- Availability and ease of use
- Optimal performance for \$\$\$
- Budget civilian chips from PRC
- Full autopilot, cruise flight mode

Applications

- Security and patrol
- Search and rescue operations
- Emergencies
- Aerial photography
- Monitoring of nature reserves
- Crowd monitoring
- Special vehicle companion



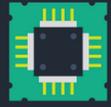
GNSS module

Battery: 16V 190Wh

Frame: fiberglass, plastic

Camera: 16MP RGB

Gyro: 2 axis



Specs



Parameter	Smartplane XV	Smartplane XM
Type	Airplane	Quadcopter
Size	1600 mm	330 mm
Weight	3.5 kg	1.8 kg
Time	up to 90 - 120 min	up to 30 - 45 min
Range	up to 100 km	up to 25 km
Speed	55 - 75 km/h	0 - 55 km/h
Battery	24V 300Wh	16V 190Wh
Wind	up to 13 m/s	up to 15 m/s
HD video	up to 50 km	up to 15 km
Antennas	Tracker 18 dBi	GCS 9 dBi
Encryption	Control and telemetry	Control and telemetry
Camera	16MP RGB	16MP RGB

Ground Station

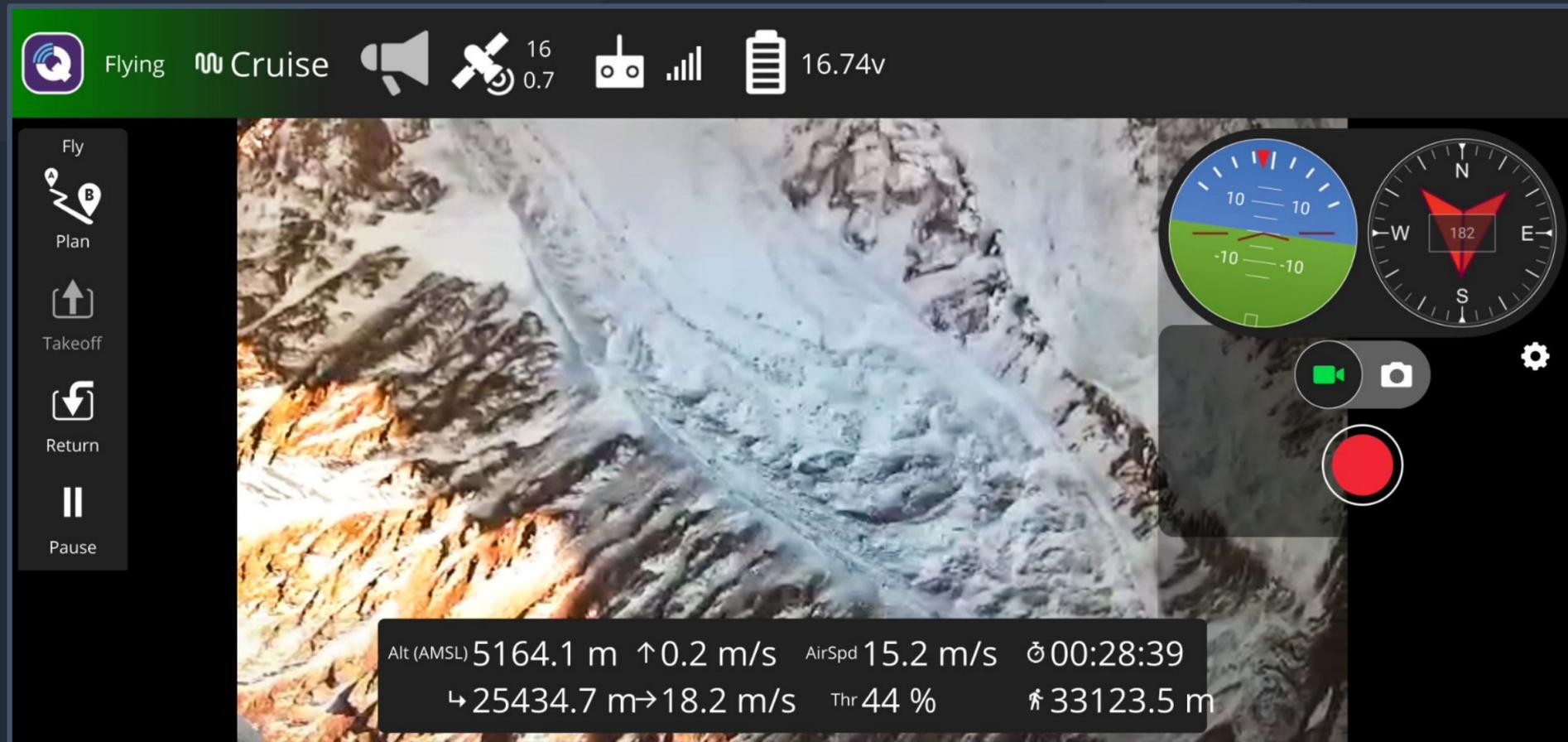


No specialized skills required to operate Smartplane XV and XM UAVs:

- Console game joystick
- Any modern Android smartphone
- Autopilot performs all flight control tasks
- Automatic takeoff and landing
- Flight modes: cruise control, loiter, position hold, auto mission, return to home

Smartplane UAVs automatically control course, altitude and position in air, adjust climb and descent rates for the pilot.

Video System



Budget class video transmitter was designed by our team especially for XV and XM UAVs with the following features:

- transmission of real-time video, as well as securely encrypted telemetry data and control commands from the remote unit over a distance of up to 50 km
- In-flight transmission of static images in full original camera resolution over a radio channel to the operator's unit with their subsequent storage in internal memory of a smartphone based on Android OS

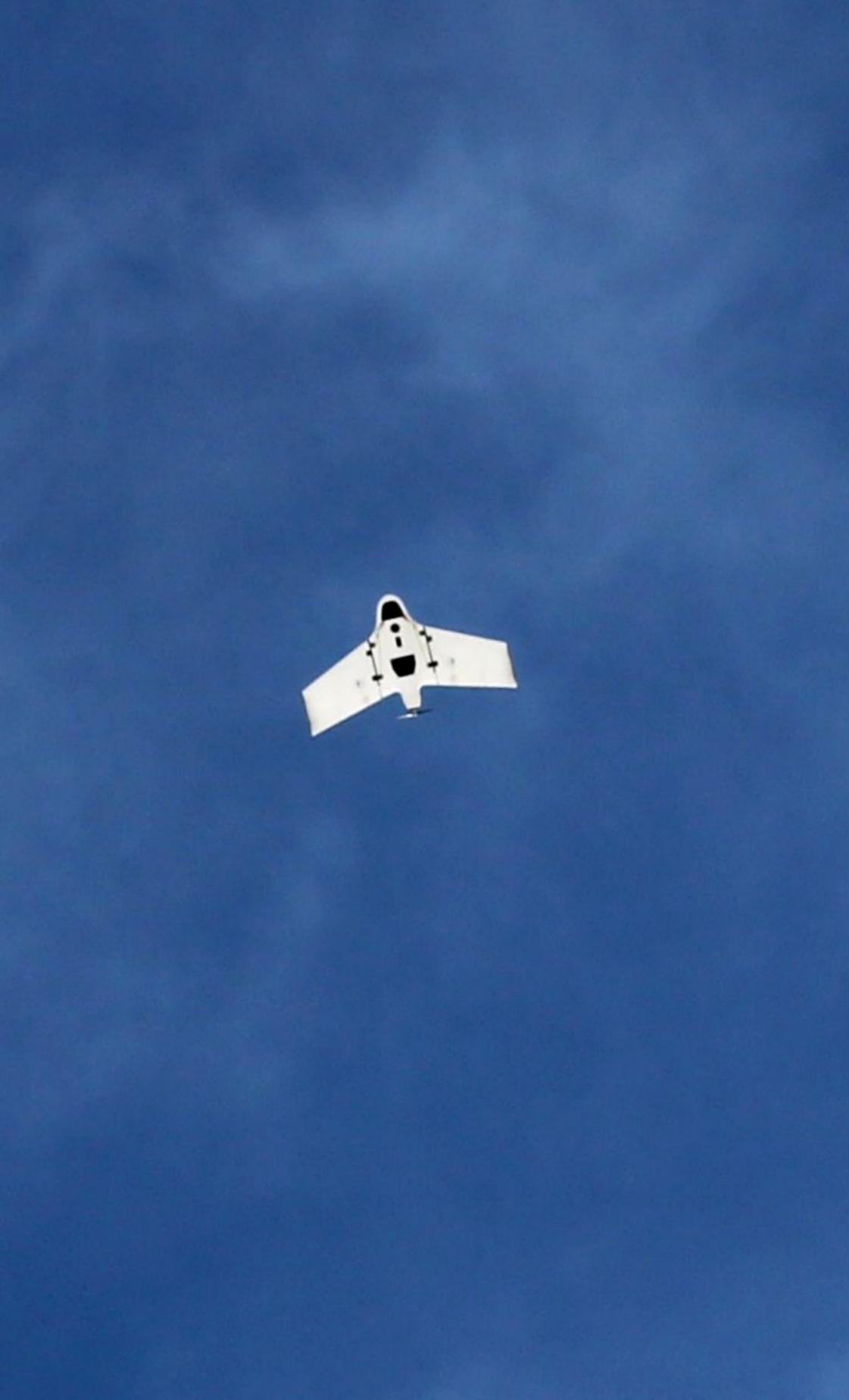
Smartplane X5



- Up to 90 min, 100 km in the air
- Weight 2.7 kg, wingspan 1.25 m
- Altitude up to 5000 meters AMSL
- Cruise speed 65 .. 85 km/h
- Wind resistance up to 13 m/s
- Catapult launch, parachute landing
- Payload - RTK, Sony RX100 V
- Adaptation to cold climate
- Telemetry transmission up to 50 km
- Fully automatic flight

Applications

- Terrain mapping and geodetic surveys
- Data integration with GIS software
- Evaluation and prevention of emergencies
- Modeling of floods and mudflows
- Inspection of pipelines, power lines, road, water and forestry properties





Inspection of moraine lake
Smartplane X5, altitude 4600 meters AMSL

Smartplane M6

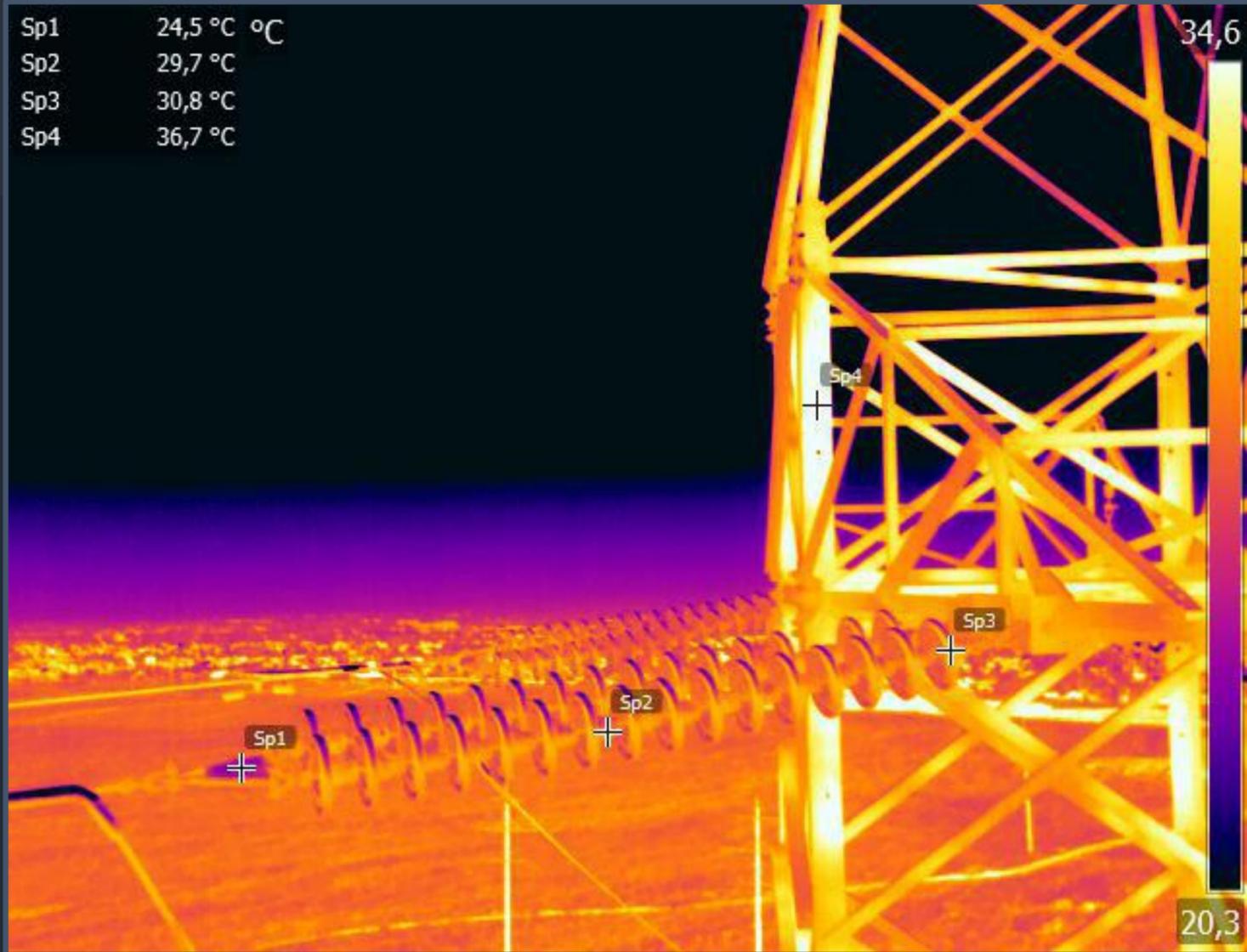


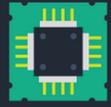
- Up to 40 minutes in the air
- Maximum weight 5 kg
- Altitude up to 4000 meters AMSL
- Speed up to 65 km/h
- Wind resistance up to 15 m/s
- FLIR Duo Pro R 640 thermal imager
- RTK, EO/IR stabilized head with zoom
- Adaptation to cold climate
- HD video transmission up to 10 km
- Manual and automatic flight

Applications

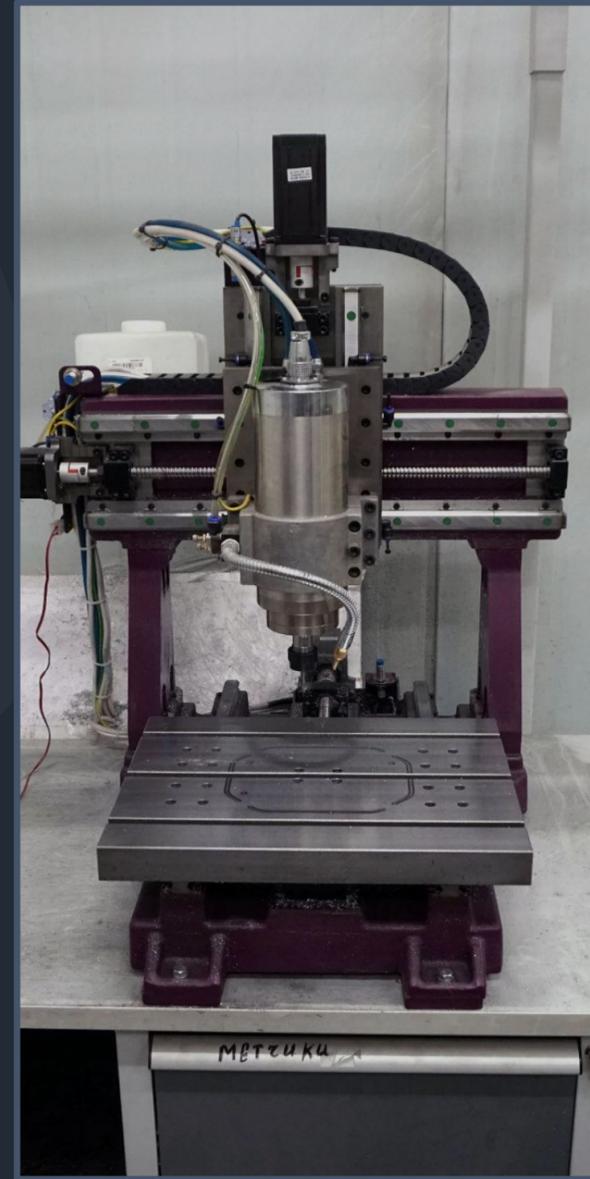
- Search and rescue operations
- Evaluation and prevention of emergencies
- Expanding the capabilities of special vehicles
- Geodetic survey, integration with GIS software
- Technical inspection of power lines, engineering structures and power plants

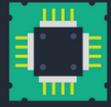
Technical inspection of power transmission lines Smartplane M6, radiometric thermal camera





Manufacturing





Robotics

Design of non-standard payloads, development of long distance radio communication systems with telemetry and video transmission, production of base stations and receivers for precision GNSS modes



Aviation

Development and simulation of light aircraft, production and optimization of propulsion systems, assembly, tuning and debugging of autopilot systems



Software

C/C++ Java .NET (C#) Python
Windows / Linux / Android
MCU / RTOS / WEB / JS / Cloud



Manufacturing

CNC milling, laser cutting, 3D printing, vacuum forming, plastic molding, composite materials, manufacturing of printed circuit boards, electronics and batteries





Thank you
for your attention!