

A Typical SURVEYOR-ORIENTED Mapping Drone



Why surveyor-oriented? FLYme is specifically made for professional aerial mapping.

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|--|-----------------------------------------------------|--|--------------------------------------------------------|--|-----------------------------------------------|--|------------------------------------------|
| | precise aerial positioning & waypoint navigation | | ultrahigh resolution 42 mpx imaging sensor | | precise landing control within 6m radius | | extremely long endurance up to 90 min |
| | incredible aerial mapping productivity & efficiency | | smart elevation partition for elevated area | | corridor/linear mapping flight plan | | multi-zone planning in a single flight |
| | multi-flight planning for large survey zone | | excellent flight performance against windy environment | | durable EPO material against hundreds of uses | | 1-day training good enough for beginners |

Worried about drone crash or drone loss? FLYme is particularly designed for flight safety control.

| | | | | | | | |
|--|----------------------------------------------------|--|------------------------------------------------------------|--|---------------------------------------------------------------|--|---------------------------------------------------|
| | no-fly-zone database for drone use reference | | compulsory checklist reminder to guarantee no improper use | | elevation condition evaluation to guarantee no crash accident | | automatic return home upon low battery power |
| | automatic return home upon aerial imaging failure | | automatic return home upon 30sec radio disconnection | | automatic return home in case of heavy wind | | automatic return home in case of high temperature |
| | one-key return command to escape from rain or bird | | GCS power-off protection for uninterrupted operation | | abort landing contingency to avoid unexpected obstacle | | airborne GPS tracker to detect drone location |

Which ranges to perfectly use for? A variety of applications include...

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|--|-------------|--|-----------------------|--|--------------------|--|---------------|-----|--|--|
| | road survey | | power line inspection | | topographic survey | | mining survey | ... | | |
|--|-------------|--|-----------------------|--|--------------------|--|---------------|-----|--|--|



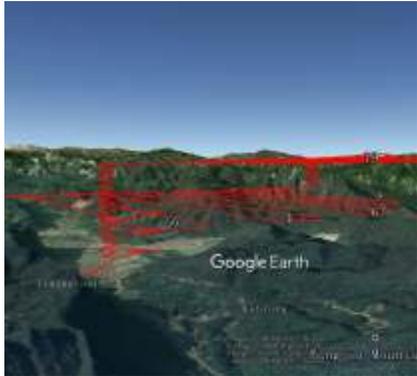
linear area flight planning



road survey skyway generation



smart elevation partition for hilly terrain



Googleearth display of partitioned skyway

specifications



aircraft system

| | |
|-------------------|-----------------------------------------------------|
| model | FLYme |
| aircraft type | fixed-wing |
| system structure | modular design |
| wingspan | 150 cm |
| packing size | 98 cm * 49 cm * 68 cm |
| take-off weight | 3.5 kg (including camera and drone battery) |
| propulsion system | 1000w electric pusher motor, with 13-inch propeller |
| power supply | lithium polymer battery, one unit |
| battery power | 7000 mAh, 6S, 22.2V |
| body material | Industrial EPO foam |



operation performance

| | |
|---------------------------|-------------------------------------------|
| pre-flight setup | 5-8 minutes |
| control mode | autopilot |
| base observations | integrated with radio datalink device |
| radio datalink | Frequency Hopping Spread Spectrum (FHSS) |
| control frequency | 1W, 915 MHz (869 MHz or 2.4 GHz optional) |
| radio communication range | typical, 5-10 km; maximum 30 km |
| transmitting power | 0.1-2W |
| weather limit | beaufort scale 6, 10.8-12.7 m/s |
| operating temperature | -10°C to 50°C |
| environmental humidity | 90% condensing |



onboard sensor

| | |
|---------------------------|---------------------------------------------------------------------------------------------|
| autopilot computer | 1x |
| airspeedometer | 1x |
| accelerometer | 1x |
| barometer | 1x |
| magnetometer | 1x |
| gyroscope | 1x |
| GPS receiver | 1x |
| airborne PPK/RTK receiver | inbuilt GNSS chipset (L1/L2 GPS, L1/L2 Glonass, B1/B2 Beidou), data refresh baud rate 20 Hz |



flight performance

| | |
|-------------------------|----------------------------------------------------------------------|
| take-off method | typical, hand launch; optional, catapult launch |
| landing method | typical, precise parachute landing; optional, belly landing |
| maximum ceiling | 4000 m |
| working height | typical 120-1400 m |
| cruising speed* | typical 20 m/s (72 km/h) |
| endurance | not less than 59 minutes, best up to 90 minutes (upon customization) |
| single flight range* | maximum 92 km |
| single flight coverage* | maximum 60 sq.km (6,000 ha) @ GSD 20cm |
| landing space | precise landing control within 6 m radius |



imagery payload

| | |
|--------------------|--------------------------------------|
| imaging sensor | Sony RX1RII |
| sensor type | Exmor R® CMOS, 2/3 full framer |
| picture size | 35.9 x 24.0 mm |
| sensor weight | 507 g (includes SD card and battery) |
| resolution value | 42.4 mpx |
| focusing length | F 35 mm |
| aperture control | F 2.0 |
| image acquisition | hot shoe triggering |
| imaging resolution | 1.5-20 cm GSD |



acquisition performance

| | |
|-----------------------------------|--------------------------------------------------------|
| single point positioning* | 3 cm CEP |
| relative accuracy (XY/Z)* | 1-3/1-5 x GSD |
| absolute accuracy (without GCPs)* | horizontal, down to 3-10 cm; vertical, down to 5-15 cm |
| absolute accuracy (with GCPs)* | horizontal, down to 1-2 cm; vertical, down to 5-10 cm |



ground control

| | |
|--------------------|--------------------------------------------------------------------------------------------------------------|
| pre-flight checks | via logical and intuitive checklist |
| basic operations | automatic take-off, flight, data capture and landing |
| flight planning | includes typical aerial survey programs in addition to standard flight control |
| camera triggering | automated, realtime display |
| fail-safe routines | automated |
| auto return | upon indications of low battery, high temperature, heavy wind, 30sec radio disconnection and imaging failure |
| fail-safe commands | manually controlled, one-key operation |
| drone tracking | APP display via pre-installed GPS tracker |

note: all aspects marked with * are determined by weather conditions and manual operations in practice.

coverage reference

| GSD | flight height | coverage per flight | coverage per day |
|-------|---------------|---------------------|------------------|
| 5 cm | 388 m | 600 ha | 2,400 ha |
| 10 cm | 776 m | 1,200 ha | 4,800 ha |
| 15 cm | 1164 m | 1,800 ha | 7,200 ha |
| 20 cm | 1552m | 2,400 ha | 9,600 ha |

note: the data shown left is computed according to the 75%/60% (forward/side overlap) from a 60-minute effective flight for a survey zone with aspect ratio around 2:1. And the area coverage per day results from 4 flights in the same day. In theory, bigger coverage figures are expectable with rational parameter settings and increased flight arrangements.