

ALTI

Endurance VTOL Unmanned Aircraft Designed for Security & Surveillance



WHAT DO WE DO?

ALTI manufactures world leading unmanned aircraft designed specifically for demanding security & surveillance applications.



ALTI is an award winning unmanned manufacturing company, based in Knysna, South Africa, with a focus on long endurance vertical take-off and landing unmanned aircraft.

ALTI was born out of the need to increase endurance while retaining the ability to operate from very confined areas without the need for a runway for take-off and landings. A brand-new vehicle had to be developed from the ground up and thus the ALTI Transition was created and started shipping out in early 2017.

Our team has nearly a decade of manufacturing, 3D printing, rapid prototyping and sales experience, in-house engineering as well as software development. We are currently the largest commercial drone manufacturer in Africa and current world leader of small unmanned VTOL fixed wing aircraft.

ALTI offers the best endurance hybrid fixed-wing VTOL unmanned aircraft in the world with an incredibly reliable multi-rotor system and a fuel powered combustion engine for unmatched efficiency in forward flight, wrapped in the most advanced carbon composite air frame available on the market.

WHY FLY ALTI?

Stay in the air longer, see more, fly further.



Low running cost

Fly further for longer at a low operating cost of only \$3 an hour



Low endurance

Collect all data in a single flight with endurance of up to 8 hours



Cover more ground

Cover more ground with an operating link range of up to 150 km



Rapid deploy

Set-up deployed from in the case to in the air in under 10 minutes



Capture accurate data

Real-time HD video & data streamed to C2, control rooms & across networks



Multi-payload

Designed to fly advanced dual sensor stabilized day & night EO/IR payloads



Take-off & land anywhere

Runway independent with no need for bulky launch or recovery equipment



Autonomous flight

Peace-of mind operation & safe flight control from take-off to landing



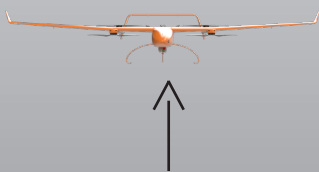
Maximize efficiency

Save valuable time, assets and resources with reduced human risk

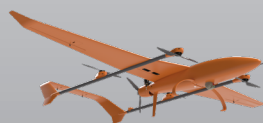
How ALTI Aircraft Work

ALTI unmanned aircraft use a reliable battery powered quad-copter component for vertical take-off and landing, paired with a fuel powered EFI combustion engine for fixed-wing propulsion for forward flight.

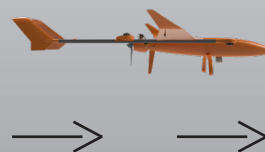
After start-up the aircraft vertically ascends to altitude, where it transitions into forward fixed-wing bound flight for the duration of the mission. Once completed, the aircraft performs a smooth & level back transition into a solid hover allowing it to land vertically.



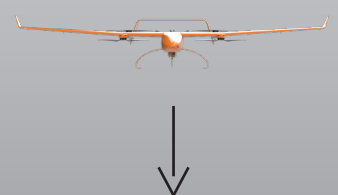
Vertical take-off



Transition into forward flight



Fixed-wing forward flight



Vertical landing

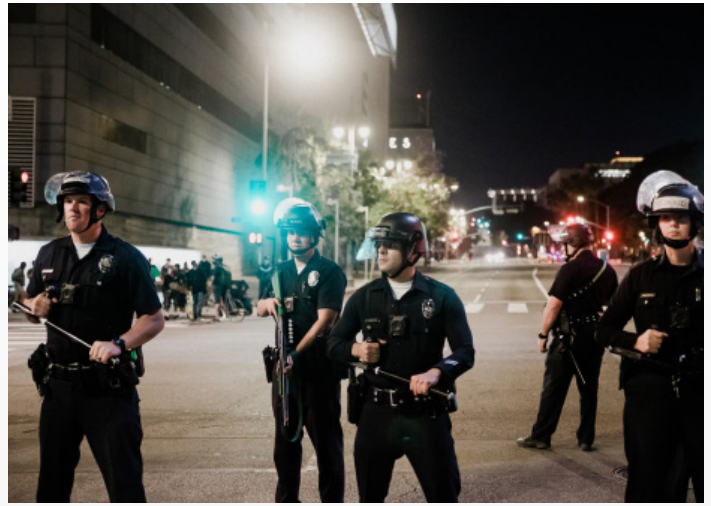
Applications & Use Cases



Police & Law Enforcement

UAVs allow for quicker action, more accurate results and uninterrupted real time aerial surveillance. Benefits include:

- Longer flight times and more coverage
- Aerial surveillance & GEO Lock
- Rapidly deploy the ALTI VTOL in an urban environment
- Situational planning & assessment



Surveillance & Reconnaissance

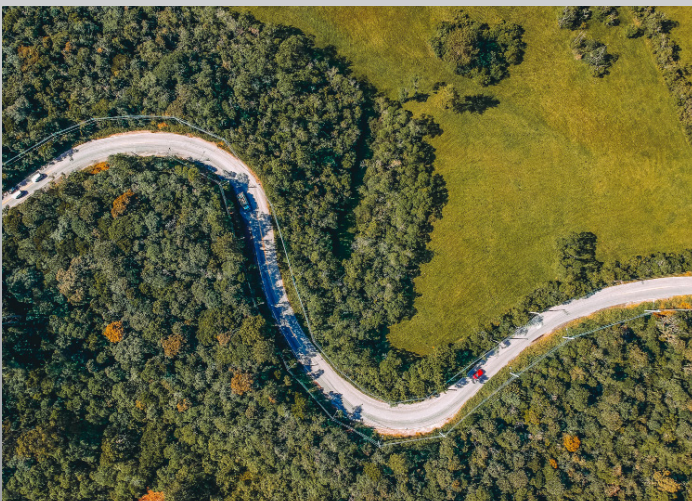
With UAVs security teams can make quick, strategic decisions in life-threatening situations. Benefits include:

- Real time aerial surveillance
- Improved data accuracy
- Quick response time
- Flexibility, availability & accessibility
- Improved efficiency

Coast Guard & Maritime

Fast deployment and response time is critical. UAVs allow you to detect small targets while surveying and includes benefits like:

- Real-time situational awareness
- Remote operation
- Minimize risk and human interaction
- Rapid response



Border Control

ALTI UAVs allow operators to get a continuous & clear aerial view of the border. Maximize border control with benefits like:

- Large area coverage
- Extended range
- Reduced labor costs
- Quick response
- Real time imaging

Wildfire Management

Benefits of UAV use in wildfire management include:

- Resource monitoring
- Real time situational awareness to track the spread and movement of fires
- Damage assessment
- Severity analysis
- Back burning prevention



Mining

Mining is known to be one of the most dangerous and asset heavy industries in the world. UAV mining benefits include:

- Monitoring, Inspection & Exploration
- Stockpile management
- Perimeter security
- Automatic surveying
- Emergency response & surveillance

Search & Rescue

The use of UAVs in search and rescue allow first responders to quickly assess the severity of a situation. Other benefits include:

- Aerial surveillance
- Emergency response
- Quick first response times
- Target locating
- Increased situation awareness



Conservation

UAVs allow for closer monitoring, assessment and observation of animals and nature. Other benefits include:

- Autonomous flight
- Remote monitoring with minimal human interference
- Extend range and flight times
- Species management & behavior tracking
- Rule enforcement



ALTI Aircraft



ALTI TRANSITION

The flagship ALTI Transition, is a 3-meter dual hybrid VTOL fixed wing aircraft allowing for high endurance flights of up to 8 hours while covering a distance of up to 600 km in a single flight.

Our advanced carbon fibre airframe is made by a South African Civil Aviation Authority Approved Aeronautical Design Organisation and features integrated fuel tank, integrated VTOL motor pods, winglets with integrated antennas, dual elevator control surfaces, navigation and landing lights, quick lock & latch connectors and an internal combustion engine with an exceptionally reliable EFI system for fixed-wing flight.

The Transition comes equipped with an all-in-one ALTI AvioX autopilot, flight and power distribution management system which allows for complete autonomy from take-off to landing.



Key Features

3 Meter
Wingspan

1 kg
Payload

8 Hours
Endurance

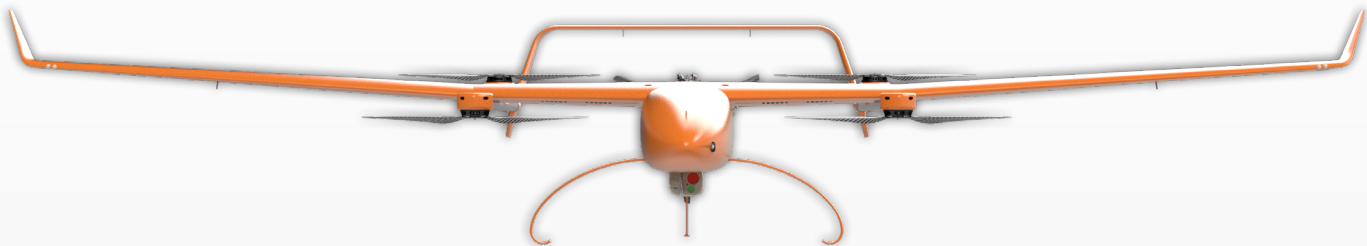
75 km/h
Speed

600 km
Range

The AxioX streams live telemetry like airspeed, RPM, battery, altitude, location, flight mode and much more directly to the C2.

The ALTI Transition features a completely modular airframe and can be rapidly deployed from in the case to in the air in under 10 minutes by only two operators without the need for a runway or bulky and expensive catapult systems.

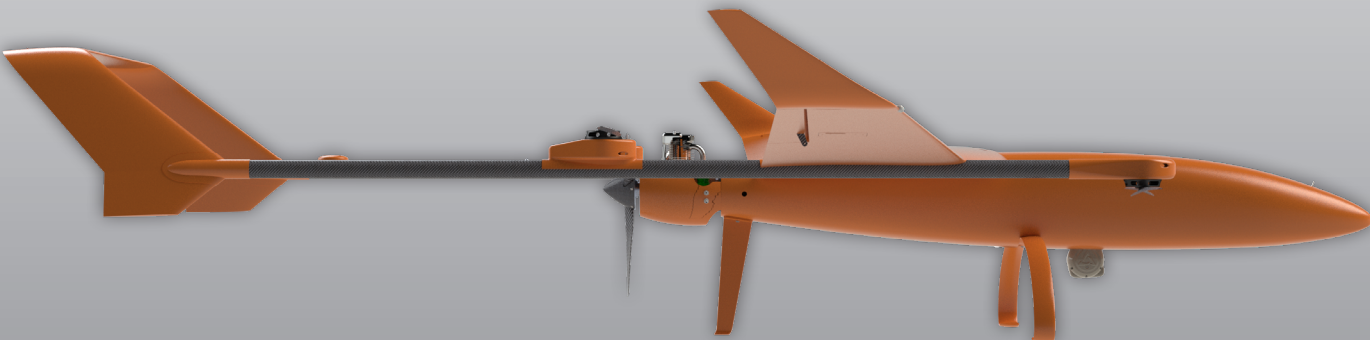
Wingspan: 3 m



Length: 2300 mm



Height: 525 mm



ALTI C² Command & Control



ALTI C² Command & Control

The ALTI C2 Command & Control station is a reliable, long-range ground control system developed specifically for quick mission planning, easy flight control and custom integration capabilities of any ALTI aircraft in the fleet.

The C2 allows operators to switch seamlessly between different flight modes and payload settings while streaming real-time data telemetry and video communication from the aircraft while in flight.

The ALTI C2 comes in a rugged, compact and portable pelican AIR case and features two (2) large HD monitors, relevant pre-loaded mission planning & payload software, data telemetry, a combination of advanced data links, such as the Silvus Streamcatser, and hot swappable battery packs for uninterrupted and continuous operation in the field.



What is included:

- ALTI GCS with Pelican Case
- Radio Controller & Umbilical Cable
- Keyboard & Mouse
- Desktop Power Supply & Holder
- Batteries & Battery Bay
- Data-link & Control Antennas
- Payload Controller

Range Options

Flight range and data telemetry is extended by pairing our aircraft with various advanced antennas, such as Omni and Directional antennas from Southwest Antennas as well as a powerful tracking antenna from Optimum Solutions.

ALTI aircraft offer the following range options:

- 100 km LOS
- 150 km LOS



Autopilot



ALTI AvioX

The world's first and only complete all-in-one Avionics system for fixed-wing VTOL unmanned aircraft.

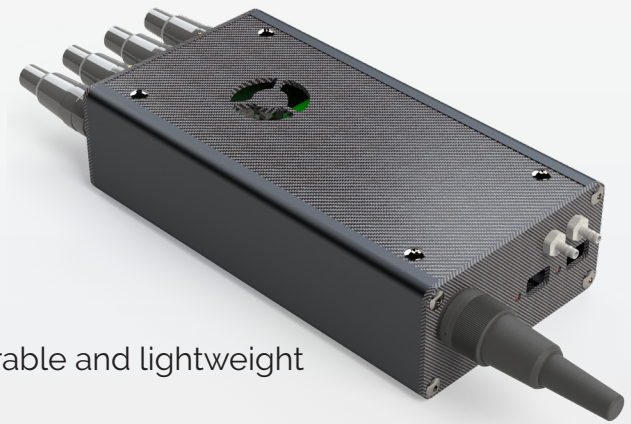
The AvioX is an ultra-compact, affordable, reliable, and easy to use solution designed and manufactured in-house by ALTI. It supports an extensive range of configurations, power requirements, and systems including but not limited to fixed-wing, multi-rotor and VTOL unmanned aircraft.

The AvioX comes with an advanced control system built in – making installation and setup quicker, easier and more convenient.

The built-in industry leading long-range control system is supplemented with:

- Active cooling and temperature control
- A vibration isolation mount
- Ultra-reliable, high-quality connectors
- Redundant & adjustable power supplies
- An advanced microprocessor
- Navigation lighting system
- 14 Channel output

All these features come enclosed in a rugged, durable and lightweight casing that is built to last.



Supported flight modes include:

- Start-up (Manual)
- Q-Hover
- Cruise
- Return to Launch (RTL)
- Auto/Mission
- Hold
- Guided Mode
- Q-Stabilize

ALTI Autopilot Fail-safes:

Q Assist Speed - VTOL motors assist when airspeed is lower than Q Assist Speed (17m/s)

Q Assist Angle - VTOL motors assist when the roll angle is higher than 40

Stall Detection - Q Assist mode will automatically enable to maintain a safe flight envelope

Max Altitude Limits Exceed - Aircraft will descend to safe altitude

Airspeed Sensor Failure - Automatic detection & warning, will continue normal flight with IMU

Transport Case



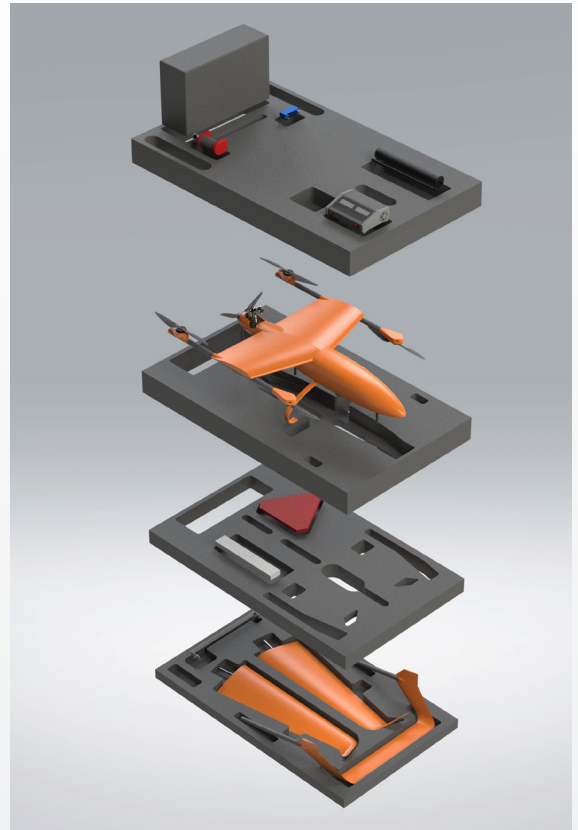
ALTI Transport Case

ALTI aircraft come with a custom made transport and storage case to protect your aircraft and all equipment required for operation.

Our aircraft are designed to be rapidly deployed, from in the case to in the air under 10 minutes with only two operators, including fueling, setup and mission planning.

Transport cases are designed so that aircraft can be unpacked with ease to match the easy tool-less assembly and rapid deployment of our aircraft.

The foam layers inside the case are made from high-quality Nitrogen blown Zotefoam, water-jet cut to precision and are both flame resistant and non-reactive to any stored equipment or components.



What is in the case?

Batteries

- 2 x Flight Pack - VTOL (4 batteries total)
- 2 x Flight Pack - Ignition (4 batteries total - Transition)
(2 Total - Ascend)
- 2 x Payload Battery
- 2 x C2 Command & Control Battery
- 2 x Data Link Packs
- 1 x Battery for Pump/Starter

Hardware

- 1 x ALTI Aircraft
- 1 x Payload - Integrated
- 1 x Port Wing
- 1 x Starboard Wing
- 1 x Empennage
- 1 x C2 Command & Control Station
- 1 x Spare VTOL Prop Set
- 1 x Spare ICE Prop
- 1 x Starter Motor
- 1 x Fuel Pump
- 1 x ICE Maintenance Kit

Case Dimensions

Transition

- Length: 1740 mm
- Width: 1040 mm
- Height: 550 mm



Payload Options

ALTI TRANSITION



COLIBRI 212



KEY FEATURES

- Object tracking
- Geo-lock target GPS location
- Real-time Video Stabilization
- Real-time navigation information
- Mission planner integration
- 360 non-continuous gimbal

ZOOM - Visible (EO): 20x optical + 2x digital (Total x40 continuous zoom)
- Thermal (IR): x4 digital

RESOLUTION - Visible (EO): 1280 x 720
- Thermal (IR): 640 x 480

DRI MAN - Visible (EO): 1280 x 720
- Thermal (IR): 640 x 480

NIGHTHAWK 2

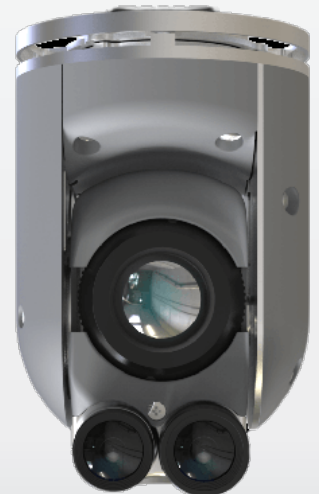
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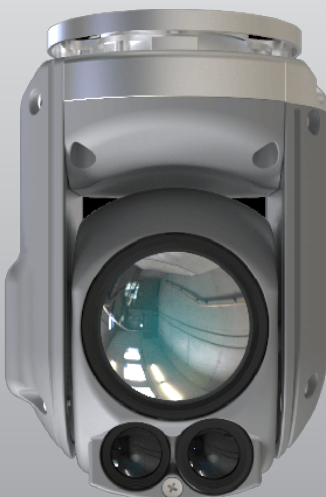
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NIGHTHAWK 2 - UZ



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DRI MAN - Visible (EO): 1280 x 720
- Thermal (IR): 640 x 480

Custom Payload Integration (On Request)

At ALTI we understand the importance of capturing data easily, safely and affordably, which is why we offer custom payload integration options. This allows for more versatility of our systems and enables users to capture the data they need.

Some of our custom payload options include:

Trillium HD25-LV

KEY FEATURES

Onboard GPS/INS

Non-ITAR

Optional object tracking

360continuous gimbal

Onboard scene tracking

Optional target tracking

ZOOM - 3.5x optical, EO/IR configuration

FLIR 30Hz 640 Boson (18mm lens)

VISIBLE FOV - 17.4° - 5.1° Digital to 1.8°

THERMAL FOV - 24.1° Digital to 6.1°



Trillium HD55-LV (M6 Specific)

KEY FEATURES

Onboard GPS/INS

Non-ITAR

720P HD digital video

Environmentally sealed

Precision targeting

Onboard scene tracking

ZOOM - 10x optical, EO/IR configuration

FLIR Boson 640 (15 - 75mm lens)

VISIBLE FOV - 54° - 4.9° Digital to 2.5°

THERMAL FOV - 29.0° - 5.9° Digital to 3.0°



Sony PPK Mapping

Sony RX1Rii

RESOLUTION - 42MP

ZOOM

2x Optical + 8x Digital

Emild Reach RS+

RANGE - up to 20 km

IP67 Rated

RS-232 Iterface

Emild Reach RS2

RANGE - up to 100 km

IP67 Rated

RS-232 Interface



CM62

KEY FEATURES

GEO-Lock

Intelligent object tracking

Navigation

Onboard video encoding

Onboard video processing

Real-time Video Stabilization

ZOOM - 25x, EO/IR configuration

RESOLUTION - Visible (EO): 1080p, 720p

- Thermal (IR): 640 x 480

Visible HFOV - 58° - 2.3°

Thermal HFOV - 32°



ALTI Aircraft in Action

ALTI aircraft are currently being used in Misool as part of ALTI and the Misool Foundation's long term conservation project assisting with long-range patrols in the greater Misool area, covering over 1200 square kilometers.



Who is ALTI

[ALTI Unmanned Aircraft Systems - An Inside Look](#)

Product Videos

[ALTI Product Video](#)

[ALTI Ascend Product Video](#)

[ALTI Transition Product Video](#)

Product Assembly

[2021 ALTI C2 Assembly](#)

[2021 ALTI Transition Assembly](#)

[2021 ALTI Ascend Assembly](#)



ALTI in Flight

[ALTI Transition Q_Hover](#)

[ALTI Transition Auto Flight](#)

[ALTI V1 Reach Test Flight](#)

Night Hawk 2 Video

[NightHawk2 Video During Day Time](#)

[NightHawk2 100m \[330ft\] AGL Thermal Channel During Night-Time](#)

[NightHawk2 300m \[990ft\] AGL Thermal Channel During Night-Time](#)

Night Hawk 2-UZ Video

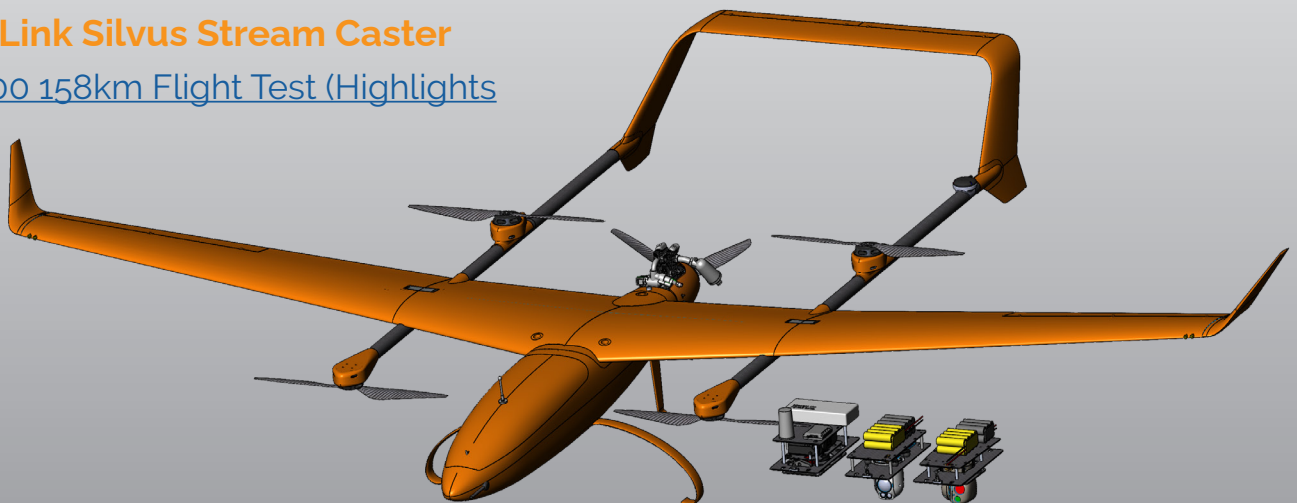
[NightHawk2-UZ Day-Time 300m Slant Range Visible & IR Industrial](#)

[NightHawk2-UZ Day-Time 150m Slant Range Visible & IR Vehicle](#)

[Tracking](#)

Data Link Silvus Stream Caster

[SC4200 158km Flight Test \(Highlights\)](#)



Our Clients & Partners



Fly Furhter. Fly Longer. Fly ALTI



COLIBRI 212

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