

Tethered



A Tethered Drone is an unmanned aerial vehicle (UAV) connected to a ground station by a cable that supplies continuous power and enables secure data transmission.

Unlike battery-powered drones, tethered drones can remain airborne for extended periods, making them ideal for persistent surveillance and monitoring.

They are widely used in defense, border security, public safety, event monitoring, and emergency response operations. The tether ensures reliable communication, enhanced operational safety, and uninterrupted mission endurance, providing a stable aerial platform for cameras, sensors, and communication equipment.

A Tethered Drone Ground Unit (TGU) is the ground-based system that supplies continuous electrical power and data connectivity to a tethered drone through a cable. It typically includes a power supply, tether management system, communication equipment, and control interfaces.

The TGU enables extended flight endurance, reliable data transmission, and safe tether deployment and retrieval. It is widely used in surveillance, security, defense, and emergency response applications, providing uninterrupted drone operations for long-duration missions.



Tethered drones offer significantly longer flight endurance by receiving continuous power from a ground station, eliminating battery limitations. They provide secure and reliable data transmission through the tether, reducing communication disruptions. Tethered systems enhance operational safety, support persistent surveillance, and enable uninterrupted monitoring for extended periods. These advantages make them ideal for defense, border security, public safety, event monitoring, and emergency response missions where continuous aerial coverage is essential.

Parameters

Configuration	Hexacopter
Weight	< 16 kg
Parking Altitude	100 m
Launch Altitude	4500 m AMSL
Endurance	Up to 12 hrs
Wind Resistance	12 m/s
Operating Temperature	-20°C to +55°C
Navigation	Dual GNSS
Takeoff/Landing	VTOL
Failsafe	RTL, Comm Loss, Low Battery
EO Sensor	8 MP Sony CMOS
EO Zoom	30x Optical (180x Hybrid)
EO Video	4K @ 30 fps
Thermal Resolution	640 × 512
Temperature Range	-20°C to +55°C
Gimbal	3-Axis Stabilized, 360° Pan
Tether Length	100 m
Max Power	240 W
Winch	Fully Automatic
Encryption	256-bit AES
Command Link	Configurable RF
Video	Real-time HD
Ground Station	Handheld

