



## Cybersecure Bi-Directional Data Link for Commercial & Industrial Drones & Robotics

SkyHopper PRO offers a cybersecure bi-directional data link specifically designed for commercial and industrial drones. By employing leading wireless technologies, the SkyHopper PRO delivers long range and Non-Line of Sight (N-LOS) communication that supports Point-to-Point, Point-to-Multipoint, fleet management and autonomous UAV systems.

SkyHopper PRO offers the Immunity, Cybersecurity and Encryption (ICE) suite. A multi-faceted and multi-layered software that protects the platform, safeguards communication channels, and encrypts the data that is transmitted and collected. The software can detect, prevent, and respond to multiple drone or robotics cyber-attacks in real-time without requiring intervention by an operator.

### Key Features:

- Cybersecure bi-directional, configurable software defined radio (SDR) Data Link
- Up to 5km Line-of-Sight (LOS) range
- Robust N-LOS & Urban operation
- Broadcast, Multicast and Unicast transmission modes
- Control & Telemetry
- Relay operation (Repeater)
- Compact and lightweight solution available as standalone, embedded and OEM versions

PRO



PRO Lite



PRO Micro



### Product Highlights:

- ICE Cybersecurity Suite
- NDA A Compliant
- Relay system for extended LOS range and overcoming dead spots in urban and industrial areas
- Operation in multi-platform environments without degradation in throughput or performance
- MIMO
- Built-in spectrum analyzer
- No integration needed for all IP payloads
- Compatible with a broad range of controllers, mission software, and payloads



**CYBERSECURE  
DATA LINK**

### Radio & Modem Specifications

Range	Up to 5km / 3.1 miles per hop (LOS, uninterrupted conditions) For extended range, other solutions available
Throughput	Configurable from 0.95-6.4 Mbps For extended throughput, other solutions available
Network Topologies	Point-to-Point, Point-to-Multipoint, Relay (Repeater), unlimited viewers Multiple Synchronized Point-to-Point Links
Modes of Operation	Broadcast, Multicast, Unicast
Sensitivity	Max -101dBm
Diversity Support	MIMO 2x2, Tx & Rx Diversity
Transmission Technology	OFDM, TDD
Encryption	128 AES – Standard Package 256 AES and other options also available for purchase ( <i>custom export control may apply</i> )
Frequencies	PRO & PRO Lite: 2.3 GHz-2.7 GHz or 4.9-5.9 GHz PRO Micro: 2.3-2.7 GHz Other frequencies available upon request

Temperature	Celsius	Fahrenheit
Environmental Temperature	-20 – 45° C	-4 – 113° F

Dimensions	mm (H x W x D)	in (H x W x D)
PRO	26 x 54 x 74	1.0 x 2.1 x 2.9
PRO Lite	19 x 54 x 74	0.8 x 2.2 x 2.9
PRO Micro	13.6 x 43 x 60	0.53 x 1.7 x 2.36

Weight	Grams	Ounces
PRO	119	4.2
PRO Lite	99	3.49
PRO Micro	62	2.16

Power	
DC Voltage	PRO & PRO Lite: 7.4-24 V DC PRO Micro: 6–20 V DC
Power Consumption	Up to 13 Watt (peak on start) 12 W Average
Output Power	Up to 1 Watt (Peak Per Antenna) 0.2 Watt Average, 23dBm per Antenna

### ICE Cybersecurity Suite

Cyber Level	<ul style="list-style-type: none"> <li>Primary (Standard)</li> <li>Professional (Optional License)</li> <li>Premium (Optional License)</li> </ul>
Multi Facet / Multi-Tier	<ul style="list-style-type: none"> <li>Prevention of cyber-attacks against CPU's Operating System Integrity and embedded software protection</li> <li>Interference Avoidance System (IAS) - real-time interference detection, cognitive radio sensing and avoidance</li> <li>Prevent man in the middle attack</li> <li>Anti-Spoofing / hijacking attacks - real-time sensing, detection, alarm, and autonomous response</li> <li>Prevent eavesdropping</li> <li>Real-time protection against RF link jamming, enables adjacent network operation</li> <li>Transmission Security (TranSec) - interception resistance</li> <li>Unique key link identification</li> <li>Multi-layer data protection, performs cryptographic operations for collected and transmitted data</li> <li>Alarm &amp; protect against GNSS jamming</li> <li>Safeguard against cloud server attacks</li> </ul>

### Interfaces

Telemetry & Control	Serial RS232
Additional Interfaces	Optional RS485/422, 1pps input/output, GPIO
Ethernet	Ethernet 10/100Mbps Full Ethernet Protocol Transparency (IP, TCP, UDP, RTP, HTTP, VLAN, VPN)
GPA Antenna	MMCX
SDR Antenna	MMCX (x2)

### Configuration & Management

Unit Monitoring	Web-GUI
Program Interface	API

For integrated video processing, SkyHopper PRO V is available.  
For integrated LTE, SkyHopper COMBO is available

Product versions available to accommodate FCC, CE & TELEC standards

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