

Model Number: KSMH01

The handheld self-organizing network device offers flexible installation and ease of operation/maintenance. It provides video and routing extension capabilities and can be flexibly applied in various dedicated networks, including communication, public safety, emergency communication, industrial information, regional broadband, wireless surveillance, cooperative management, and intelligent transmission networks. It delivers stable, reliable, timely, and efficient high-definition video, multi-channel data, clear voice, and visual command and dispatch.

FEATURES:

- Each node functions as both an access terminal server and a wireless routing relay.
- Forms centerless, distributed, self-organizing, self-adaptive, and self-healing networks with dynamic routing and multi-hop relay, supporting star, linear, mesh, and hybrid topologies.
- Supports reliable communication for point-to-point, point-to-multipoint, and multipoint-to-multipoint IP network streams, asynchronous data streams, HD video, and high-fidelity voice.
- Provides robust long-distance, high-bandwidth, and low-latency transmission even in harsh environments with non-line-of-sight conditions, high mobility, and complex interference.

APPLICATIONS:

- Communication
- Counter-terrorism & Emergency Response
- Law Enforcement & Public Security
- Security Activities
- Disaster Rescue
- Firefighting Command
- Forest Fire Prevention & Monitoring
- Civil Air Defense / Seismology
- Power Line Inspection
- Digital Oilfields
- UAV Swarms
- Fleet Intercommunication
- Naval Formations & Maritime Communication
- Airport Ground Operations
- Subway Emergency Response
- Highway Construction
- Hydrological Monitoring
- Mobile News Gathering & Broadcasting
- Medical Services

Focus on Your Application

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Specifications subject to change without notice

Mesh Radio (L-band / 4W / Handheld Type)

Version. 1.0_2025.03.27

Model Number: KSMH01

ELECTRICAL SPECIFICATIONS

Parameter	Specification
Operating Frequency	1300–1500 MHz, adjustable in 1 MHz steps. Supports customization from 200–6000 MHz.
Carrier Bandwidth	2.5 / 5.0 / 10 / 20 MHz, flexibly configurable.
Duplex Mode	TDD
MIMO Technology	Space-Time Coding, Receive Diversity, TX/RX Beamforming, Spatial Multiplexing
Modulation Scheme	QPSK/16QAM/64QAM/256QAM, with modulation adaptation.
Transmission Capacity	Max Data Rate: ≥ 40 Mbps.
	Single-Hop Long-Range Capacity: ≥ 15 Mbps @ 30 km (Line-of-Sight, unobstructed).
Communication Mode	Distributed, centerless point-to-point, point-to-multipoint, multipoint-to-multipoint. Layer 2 or Layer 3 dynamic routing with multi-hop relay, supporting dynamic star, linear, mesh, and hybrid topologies.
Single-Hop Latency	Average < 10 ms (20 MHz bandwidth).
Network Scale	≤ 128 nodes (in a co-frequency network)
Transmit Power	≥ 2 W per channel (max).
Receiver Sensitivity	≤ -100 dBm @ 5 MHz bandwidth.
Anti-Jamming Methods	Intelligent Frequency Selection, Enhanced Intelligent Frequency Selection, Autonomous Frequency Hopping, Adaptive Frequency Hopping, Dynamic Adaptive Anti-Jamming.
Security & Encryption	Supports DES, AES128/256 (SM4/SNOW3G/ZUC optional; chip/TF encryption customization or external encryption unit).
Local/Remote Management	Configuration of operating frequency, channel bandwidth, Network ID, transmit power, etc. Real-time display and logging of network topology, link signal strength/SNR, uplink/downlink traffic, inter-node distance. BD/GPS (GNSS) positioning on electronic map. Temperature, voltage, interference monitoring. Software upgrade (remote silent upgrade & wake-up optional).
Other	Startup time < 28 s; Network join/update/handover time < 1 second.
	Automatic carrier tracking, adapts to Doppler shift with ± 6 kHz frequency offset, supports mobile communication at speeds over 3600 km/h (Mach 3, 1000 m/s).
Power Supply	Internal battery: 11.1V / 76 Wh.
Power Consumption	Peak: ≤ 20 W.
Communication Range	≥ 30 km under line-of-sight conditions.

PHYSICAL DIMENSIONS

Parameter	Value	Units	Notes
Dimensions (H x W x D)	$\leq 200 \times 68 \times 38$	mm	(excluding antenna). Customizable.
Weight	≤ 0.6	kg	Main Unit
	≤ 1.2	kg	Main Unit + Battery + Antenna
Antenna Interface	TNC-type $\times 2$		
Power/Service Interface	Waterproof aviation plug $\times 1$		
Indicator Interface	One tri-color LED and one bi-color LED.		
Wi-Fi Interface	SMA-type $\times 1$ (Optional)		
Protection Rating	IP67		

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ENVIRONMENTAL CHARACTERISTICS

Parameter	Value	Units	Notes
Operating Temperature	-40~+65	°C	
Battery Life	≥6	hours	(within operating temperature range)
Low Pressure	50	kPa	for high-altitude regions

INDICATOR DEFINITIONS

Indicator	Status / Color	Meaning
RSSI Indicator	Steady green	The link quality is excellent
	Steady blue	The link quality is good
	Steady yellow	The link quality is medium
	Steady purple	The link quality is slightly worse
	Steady red	The link quality is poor
	Off	The link is interrupted
LINK Indicator	Steady red	The network is not connected
	Blinking red	Starting/not connected to the network
	Steady green	The network is connected
	Blinking green	Talk has been pushed

POWER INTERFACE CONNECTOR

Pin #	Name	Specifications
1	5V OUT	Output for external BD/GPS module
2-3	GND	Ground
4-5	VCC	Power Input
6	ETH_TX+	Service Ethernet Tx Data+
7	ETH_TX-	Service Ethernet Tx Data-
8	ETH_RX-	Service Ethernet Rx Data-
9	TTL(UART_RXD)	Serial Port Receive
10	TTL(UART_TXD)	Serial Port Transmit
11	TTL(UART_GND)	Serial Port Ground
12	ETH_RX+	Service Ethernet Rx Data+

OUTLINE



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