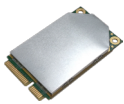


MIMOMesh Series

Lightweight Airborne (SWaP-C) - Wireless MESH/Data Link

RESSCOM
MESH RADIO



5.1×3.0×0.7cm/14g
0.25Watts×2
(Air to G. 3~15KM)



6.0×4.8×1.1cm/46g 6.0×5.8×1.3cm/60g 9.6×5.8×1.9cm/120g



0.5Watts×2/1Watts×2
(Air to G. 10~30/20~50KM)



11.7×6.2×2.0cm/160g
1Watts×2/2Watts×2
(Air to G. 20~50/50~100KM)



13.8×6.2×2.7cm/225g 13.8×6.2×3.1cm/271g
4Watts×2/5Watts×2
(Air to G. 100~150/100~200KM)



11.7×6.2×3.2cm/287g
2Watts×2/4Watts×2/5Watts×2
(7Z030/7Z035/7Z100)
(Air to G. 20~100/100~150/100~200KM)



11.7×6.2×3.8cm/349g 11.7×6.2×4.2cm/360g
1Watts×2/2Watts×2
Extended WIFI/HDMI/SDI
(Air to G. 20~50/50~100KM)



11.7×6.2×4.2cm/380g
2Watts×2/4Watts×2
Extended WIFI/HDMI/SDI
(Air to G. 20~100/100~150KM)



13.4×12.8×3.8cm/598g 14.2×13.7×5.7cm/1.08kg
10Watts×2/20Watts×2
(Air to G. 150~300/250~500KM)



14.2×14.0×6.0cm/1.11kg 23.0×14.8×3.5cm/1.25kg
30Watts×2/40Watts×2
(Air to G. 250~500KM)



13.3×11.4×4.5cm/1.13kg 16.1×15.5×5.1cm/1.30kg
2W/4W, 10W/20W (Dual-band operation 2T2R, ULSC quad-band switching 1T2R)
(Air to G. 20~150KM) (Air to G. 100~200KM)



RF Output Power (Support TPC, transmission power control, 1dBm adjustable)	0.25Watts×2	0.5Watts×2	1Watts×2	1Watts×2/2Watts×2	4Watts×2/5Watts×2	2Watts×2/ 4Watts×2/5Watts×2	10Watts×2/20Watts	30Watts×2/40Watts×2
Single Hop Communication Distance	Air to G. 3-15KM	Air to G. 10-30KM	Air to G. 20~50KM	Air to G. 20~50KM, 1Watts×2 Air to G. 50~100KM, 2Watts×2	Air to G. 100~150KM, 4Watts×2 Air to G. 100~200KM, 5Watts×2	Air to G. 50~100KM, 2Watts×2 Air to G. 100~150KM, 4Watts×2 Air to G. 100~200KM, 5Watts×2	Air to G. 150~300KM, 10Watts×2 Air to G. 250~500KM, 20Watts×2	Air to G. 250~500KM
Size/Weight	5.1×3.0×0.7cm/14g	6.0×4.8×1.1cm/46g 6.0×5.8×1.3cm/60g	9.6×5.8×1.9cm/120g	11.7×6.2×3.8cm/160g	13.8×6.2×2.7cm/225g 13.8×6.2×3.1cm/271g	11.7×6.2×3.2cm/287g	13.4×12.8×3.8cm/598g 14.2×13.7×5.7cm/1.08kg	14.2×14.0×6.0cm/1.11kg 23.0×14.8×3.5cm/1.25kg
Supply Voltage	3.5-5V DC	9-39V DC	9-39V DC	9-39V DC, 1Watts×2 12-36V DC, 2Watts×2	12-36V DC	12-36V DC	18-32V DC	28-32V DC
Power consumption	Operation 1-2A/ Standby 0.5-1A@3.5-5V	Operation 0.3-0.5A/ Standby 0.2-0.3A@12V	Operation 1-2A/ Standby 0.5-0.7A@12V	Operation 1-2A/ Standby 0.5-0.7A@12V	Operation 2-4A/ Standby 0.5-0.7A@12V	Operation 2-4A/ Standby 0.5-0.7A@12V	Operation 3-6A/Standby 0.7-0.9A@16.8V, 10W×2 Operation 6-10A/Standby 0.7-0.9A@20V, 20W×2	Operation 6-10A/ Standby 0.7-0.9A@20V
Transmission rate	1-70Mbps (20MHz BW, 7Z020)/1-130Mbps (20MHz BW, beamforming by 7Z030)/1-252Mbps (40MHz BW, 7Z035)/1-350Mbps (80MHz BW, 7Z100)							
Frequency range	70M-6GHz/Uper C-X-Ku customizable. Same frequency or different frequency of TDD, 2T2R at single band or 1T2R at dual-band							
Service interface	IP, RS232+UART or SBUS, PTT voice							

Lightweight Airborne(SWaP-C)-Wireless MESH/Data Link Technical Specifications

General

SDR Platform, Waveform	AD936X+FPGA (7Z020, 7Z030, 7Z035, 7Z100), Mobile network MANET+MIMO
MIMO Technology	Space-time coding, Receive Diversity, TX/RX beamforming, Spatial multiplexing
Receive Sensitivity	-103dBm@5MHz BW
Channel Bandwidth	1.25/2.5/5/10/20MHz (7Z020, 7Z030)/40MHz (7Z035)/80MHz (7Z100, 40MHz+40MHz dual antenna frequency transceiver of carrier aggregation), configurable
Data Rate	1-70Mbps (20MHz BW, 7Z020)/1-130Mbps (20MHz BW, beamforming by 7Z030)/1-252Mbps (40MHz BW, 7Z035)/1-350Mbps (80MHz BW, 7Z100) Adaptive, QoS
Modulation Mode	TD-COFDM, BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM Adaptive (Fixed setting optional)
RF Output Power (Support TPC, transmission power control, 1dBm adjustable)	0.25Watts×2; 0.5Watts×2; 1Watts×2; 2Watts×2; 4Watts×2; 5Watts×2; 10Watts×2; 20Watts×2; 30Watts×2; 40Watts×2
Single Hop Communication Distance	Air to G. 3-15KM, 0.25Watts×2; 10-30KM, 0.5Watts×2; 20-50KM, 1Watts×2; 50-100KM, 2Watts×2; 100-150KM, 4Watts×2; 100-200KM, 5Watts×2; 150-300KM, 10Watts×2; 250-500KM, 20Watts×2/30Watts×2/40Watts×2
Mode	Distributed centerless Point-to-point/Point-to-multipoint/Multipoint-to-multipoint, Layer 2 or 3 of Dynamic routing, Multi-hop relay, Star/Line/Network/Hybrid
Single Hop Delay	Average 6ms (Unidirectional, 20MHz BW)
Encryption	DES, AES128/256 (SM4/SNOW3G/ZUC optional, Chip/TF card encryption customized or external encryption machine)
Anti-Jamming Mode	Channel selection for manual spectrum scanning, across the entire frequency band (single-band/dual-band/triple-band) to enhanced intelligent frequency selection (spectrum awareness)/adaptive frequency hopping (FHSS) (up to 1000hops/second)/roaming mode, and multi-level anti-interference capabilities.
Local/Remote Management	Operating frequency, channel bandwidth, network ID, transmit power and other parameter settings, spectrum scanning, real-time display and statistical records of network topology, link field strength signal-to-noise ratio, upload and download traffic, node distance, BD/GPS(GNSS) positioning electronic map, temperature/voltage/jamming Monitoring, software upgrade (remote silence and wake-up optional)
Others	The startup time is less than 28 seconds, and the network access/update/switchover time is less than 1 second; There is no limit on the user capacity of a single system (256 nodes or more) and the number of hops in Mesh networks (Data 15+ hops, voice 10+ hops, video 8+ hops); The total transmission rate loss for more than three hops is less than 70%; Automatic carrier tracking, adapted to a Doppler frequency deviation of ±6kHz frequency offset, supports mobile communication at speeds above 7200 kilometers per hour (6 Mach, 2000 meters per second)

Bands (70M-6GHz/Upper C-X-Ku customizable. Same frequency or different frequency of TDD, single-band/dual-band/tri-band of 2T2R)

BAND	Frequency range	BAND	Frequency range
VHF/UHF (MHz)	360-450/450-550/570-700/800-950, 225-400/225-678/320-470*	S Band (GHz)	2.0-2.2/2.2-2.4/2.3-2.5/2.5-2.7/2.7-2.9/3.2-3.4/3.4-3.6/3.6-3.8, 1.9-2.7/2.0-2.7/2.1-2.7/2.7-3.6*, 2-4GHz Customization
L Band (GHz)	1.0-1.2/1.1-1.3/1.3-1.5/1.5-1.7/1.6-1.8, 1.0-1.5/1.1-1.6/1.2-1.7/1.3-1.8/1.6-2.3/1.7-2.4/1.8-2.5*, 500M-2GHz Customization	C Band (GHz)	4.4-5.0/5.25-5.85, 4.2-5.2/5.5-6.0/6.4-7.2*, 4-6GHz Customization

(Note: RF power, Dimensions, Weight is different)

MIIT (MHz) 336-344/512-592/566-626/606-678/1420-1520/1430-1444

Mechanical

Size/Weight	5.1×3.0×0.7cm/14g, 0.25Watts×2-Iron Gray 6.0×4.8×1.1cm/46g, 0.5Watts×2-Iron Gray 6.0×5.8×1.3cm/60g, 0.5Watts×2-Iron Gray 9.6×5.8×1.9cm/120g, 1Watts×2-Iron Gray 11.7×6.2×2.0cm/160g, 1Watts×2/2Watts×2-Iron Gray 11.7×6.2×3.8cm/349g, 1Watts×2/2Watts×2-Black 11.7×6.2×4.2cm/360g, 1Watts×2/2Watts×2-Multi-interface Black 11.7×6.2×4.2cm/380g, 2Watts×2/4Watts×2-Fan Black 11.7×6.2×3.2cm/287g, 2Watts×2/4Watts×2/5Watts×2-Iron Gray 13.8×6.2×2.7cm/225g, 4Watts×2-Iron Gray 13.8×6.2×3.1cm/271g, 5Watts×2-Fan Iron Gray 13.4×12.8×3.8cm/598g, 10Watts×2/20Watts×2-Iron Gray 14.2×13.7×5.7cm/1.08kg, 10Watts×2/20Watts×2-Black 14.2×14.0×6.0cm/1.11kg, 30Watts×2/40Watts×2-Dark Gray 23.0×14.8×3.5cm/1.25kg, 30Watts×2/40Watts×2-Thin Iron Gray
Installation/Color	4 Mounting Holes/Black, Iron Gray (Army Green Optional)

Power

Supply Voltage	3.5-5V DC, 0.25Watts×2 9-39V DC, 0.5Watts×2/1Watts×2 12-36V DC, 2Watts×2/4Watts×2/5Watts×2 18-32V DC, 10Watts×2/20Watts×2 28-32V DC, 30Watts×2/40Watts×2
Power consumption	Operation 1-2A/Standby 0.5-1A@3.5-5V, 0.25Watts×2 Operation 0.3-0.5A/Standby 0.2-0.3A@12V, 0.5Watts×2 Operation 1-2A/Standby 0.5-0.7A@12V, 1Watts×2/2Watts×2 Operation 2-4A/Standby 0.5-0.7A@12V, 4Watts×2/5Watts×2 Operation 3-6A/Standby 0.7-0.9A@18V, 10Watts×2 Operation 6-10A/Standby 0.7-0.9A@20V, 20Watts×2 Operation 22A/Standby 0.4-1.6A@28-32V, 30Watts×2/40Watts×2
Power Selection	Power Supply by Main Cable

Interface

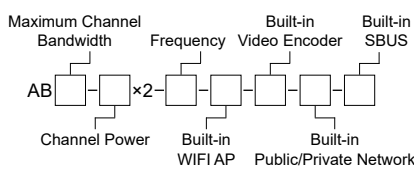
Basic interface	2xIPEX/2xMMCX/2xSMP/2xSMA RF, 1-2xRJ45 Ethernet 100/1000BaseT, RS232, DC input. TTL (UART)/SBUS/Bluetooth 1.2-230.4Kbps, WIFI AP, BD/GPS (GNSS) optional. Supports transparent transmission via Ethernet and serial ports, and supports all communication protocols, including MAVLink. Service priority can be selected
Network Extension Optional	Public Network Routing/4G LTE, WB-NB integration, Fiber, Satellite
Video Extension Optional	Low Delay HDMI/SDI/CVBS, 4K/2K/1080P/720P/D1
Power Indicator	Steady green - Powered on
LINK Indicator	Steady red - The network is not connected Blinking red - Starting/not connected to the network Steady green - The network is connected
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
Management Interface/Control Interface	Web-based network management/GUI, API for secondary development interface/SNMP

Environmental

Operation Temperature -40°C ~+80°C Protection Level IP66 (IP67/IP68 Customized)

Product Model Approval Certificate of Radio Administration of The Ministry of Industry and Information Technology of China: 2018FP5238, 2018FP6081, 2021FP0114, 2021DP10060, 2022FP15779

Model Name:



Maximum Channel Bandwidth (MHz)	Channel Power (W)	Frequency (MHz)	Built-in WIFI AP	Built-in Video Encoder	Built-in Public/Private Network	Built-in SBUS
20	0.25, 0.5	600, U	0(N)	0(N)	0(N)	0(N)
40	1, 2, 4, 5	1400, L	1(Y)	HDMI	4G/5G	1(Y)
80	10, 20	2300, S		SDI/AV	4G LTE CPE	
	30, 40	4500, C				

AB20-2×2-1400-1-HDMI-4G/5G-0 Express: Maximum Channel Bandwidth 20MHz, 2Watts×2, 1400MHz, With WIFI AP, Built-in HDMI Coding, Built-in 4G/5G Public Network Module, Without Built-in SBUS Airborne Radio.

Accessories/Options:

Primary Cable/Auxiliary Cable Connecting line

Antenna

Camera
MESH PTZ Camera
Smart Helmet

Command Dispatch Desk (Scheduling software optional)

Monitor Station

Omnidirectional + Directional Antenna Tracking Platform

Application Diagram: