

SINOSUN-SM1×2/2×2/10×2

Airborne Radio

Technical Specification



**1Watt×2/2Watt×2
IP/RS232**



**1Watt×2/2Watt×2
IP/RS232/HDMI/Sbus**



**10Watt×2
IP/RS232**

1.Airborne Radio Specifications

General				Mechanical	
Waveform	Mobile Network MIMO (MN-MIMO)			Size/Weight	11.7x6.2x1.9cm/149g (1Watts×2/2Watts×2 Airborne Radio-Lron Gray) 11.7x6.2x4.2cm/364g (1watts×2/2watts×2 Airborne Multi-interface Radio-Black) 12.7x11.0x3.3cm/635g (10Watts×2 Airborne Radio-Lron Gray)
MIMO Technology	Space-time coding、Space Diversity、TX /RX beamforming、Spatial multiplexing			Color	Black、Lron Gray、Army Green Optional
Receive Sensitivity	-103dBm@5MHz BW			Installation	4 Mounting Holes
Channel Bandwidth	1.25/2.5/5/10MHz optional			Power	
Data Rate	1-70Mbps(10MHz BW) Adaptive,QoS			Supply Voltage	9-36VDC (1Watts×2/2Watts×2) 18-36VDC (20Watts×2)
Modulation Mode	TD-COFDM,BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM Adaptive(Fixed setting optional)			Power consumption	Operation 1-2A/Standby 0.5-0.7A@12V (1Watts×2/2Watts×2) Operation 3-6A/Standby 0.7-0.9A@16.8V (10Watts×2)
RF Output Power (Support TPC, transmission power control)	1Watts x2 2Watts x2 10Watts x2			Power Selection	Power Supply by Twist-Lock Battery or Main Cable
Single Hop Communication Distance	100-300 KM (visible), 1-30 KM (urban area)			Interface	
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			Basic interface	2xTNC RF、1-3xRJ45 Ethernet 100/1000BaseT、WiFi AP,GPS/BD RS232/TTL(UART)、Sbus/Bluetooth、1.2-230.4Kbps、DC Input
Single Hop Delay	Average 7mS (20MHz BW)			Push to talk/Auxiliary interface	MIC、SP、PTT、GND、RS485/422、USB2.0 OTG
Encryption	DES、AES128/256、SNOW3G/ZUC optional、Chip/TF card encryption customized or external encryption machine			Network Extension Optional	Public Network Routing/4G LTE、WB-NB integration、Fiber、Satellite
Anti-jamming Mode	Manual spectrum scanning channel selection、Full band enhanced intelligent frequency selecting(spectrum awareness)/Full band adaptive frequency hopping/ Roaming mode optional			Video Extension Optional	Low Delay HDMI/SDI/CVBS、4K/2K/1080P/720P/D1
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、GPS/Beidou electronic map、temperature/voltage/jamming Monitoring、software upgrade、Remote silence and wake-up optional			Link Status Indicator	Steady red - The network is not connected Blinking red - Starting/not connected to the network Steady green - The network is connected Blinking green - Voice PTT is down
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 bandwidth loss of multiple 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).			RSSI Link 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 or link is down
Bands(70M-6GHz. 2T2R at single band, or 1T2R at dual band selectable/smart change*)					
BAND	Frequency range (MHz)	BAND	Frequency range (GHz)		
UHF	430-550/570-700/800-950, 225-400/320-470*	S Band	1.6-1.8/1.8-2.0/2.0-2.2/2.2-2.5/2.5-2.7/2.7-2.9,1.6-2.3/1.9-2.7*		
L Band	1000-1200/1300-1500, 1200-1700*	C Band	4.4-5.0/5.25-5.85, 4.2-5.2/5.5-6.0*		
MIIT	336-344/512-582/566-626/606-678/1420-1520/1430-1444				
Environmental					
Operation Temperature	-40°C ~+80°C				
Protection Level	IP66, IP67/IP68 Customized				
				Management Interface/Control Interface	Web-based network management/GUI, API for secondary development interface/ SNMP

2. Airborne Radio Hardware Interfaces

2.1 Airborne Radio (Lron Gray)



- 1** RF Channels 1-2 Connectors [SMA Female]
- 2** Power/Communication Ports

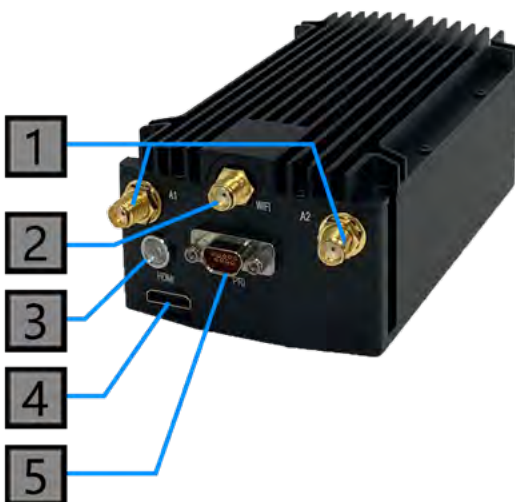


- 3** Link Status Indicator
 - Steady red: The network is not connected
 - Blinking red: Starting/not connected to the network
 - Steady green: The network is connected

2.2 Airborne Radio (Black)

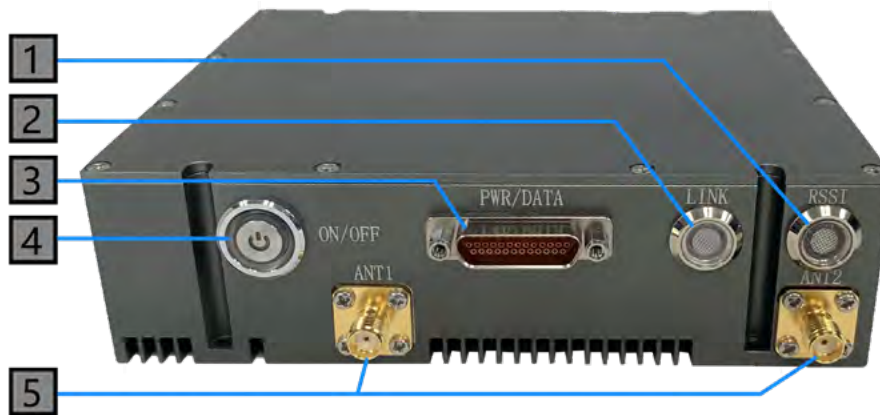
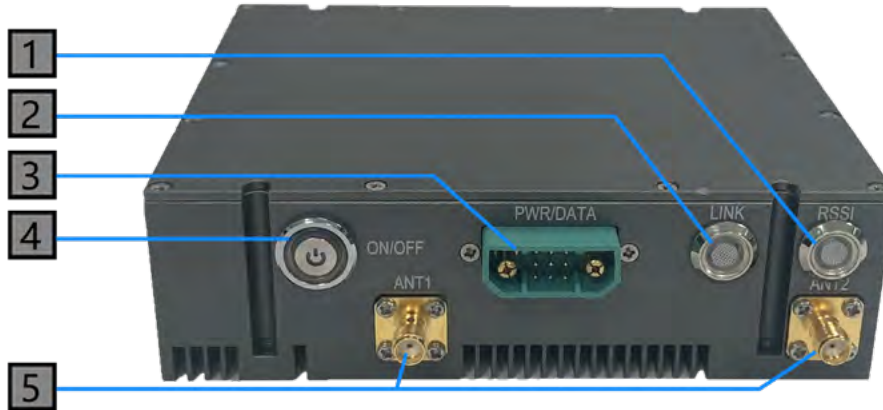


- 1** RF Channels 1-2 Connectors [SMA Female]
- 2** WiFi Antenna
- 3** Power/Communication Ports
- 4** Link Status Indicator
 - Steady red: The network is not connected
 - Blinking red: Starting/not connected to the network
 - Steady green: The network is connected
 - Blinking green: Voice PTT is down



- 1** RF Channels 1-2 Connectors [SMA Female]
- 2** WiFi Antenna
- 3** Link Status Indicator
 - Steady red: The network is not connected
 - Blinking red: Starting/not connected to the network
 - Steady green: The network is connected
 - Blinking green: Voice PTT is down
- 4** HDMI Port
- 5** Power/Communication Ports

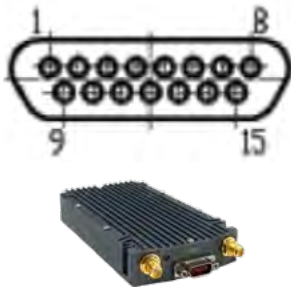
2.3 High-power Airborne Radio (Lron Gray)



- | | |
|--|--|
| <p>1 RSSI Link Indicator</p> <ul style="list-style-type: none"> • Steady green: The link quality is excellent • Blue Steady: 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 or link is down • Off: The link is interrupted | <p>3 Power (14.8-24V), Ethernet, and Serial Port Connector</p> |
| <p>2 Link Status Indicator</p> <ul style="list-style-type: none"> • Steady red: The network is not connected • Blinking red: Starting/not connected to the network • Steady green: The network is connected • Blinking green: Voice PTT is down | <p>4 Radio switch</p> <p>5 RF Channels 1-2 Connectors [SMA Female]</p> |

3. Airborne Radio Connection Port Pin Definition

3.1 Airborne Radio (Lron Gray/Black-J30J-9)

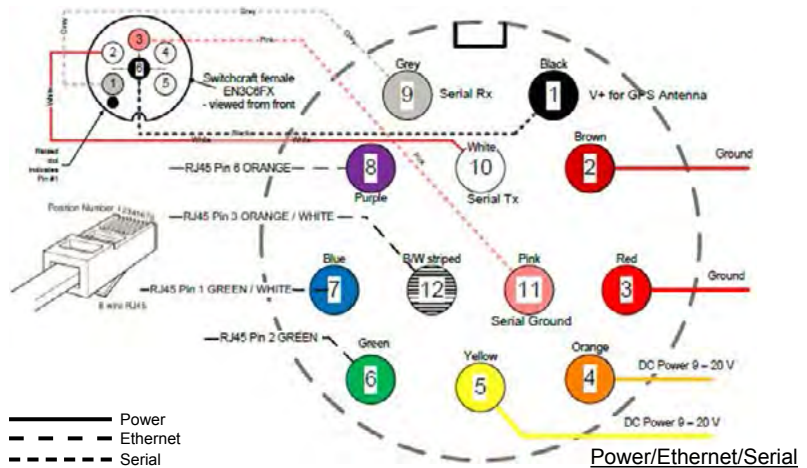


Power/Ethernet/Serial Connector Pinout	
J30J-15ZKN-J	Signal
1	RS232_RXD0
2	RS232_TXD0
3	RS232_GND0
4	RS232_GND1
5	RS232_RXD1
6	RS232_TXD1
7	5V Output
8	ETH RX+
9	ETH RX-
10	ETH TX+
11	ETH TX-
12	GND
13	GND
14	VCC IN
15	VCC IN

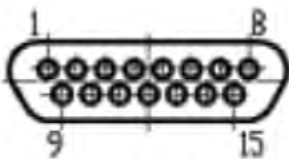
3.2 Airborne Radio (Lron Gray/Black-Aviation Connector)



Power/Ethernet/Serial Connector Pinout	
LF10WBRB-12PD	Signal
1	5V OUT (For External GPS Puck)
2	GND IN
3	GND IN
4	VCC IN
5	VCC IN
6	100-Base T ETH0 M2N
7	100-Base T ETH0 M2P
8	100-Base T ETH0 M1P
9	RS232_RX0
10	RS232_TX0
11	RS232_GND
12	100-Base T ETH0 M1N



3.3 Airborne Radio (Black-J30J-15ZKP)



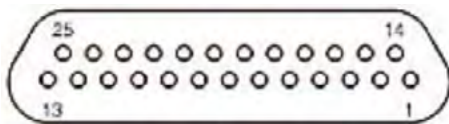
Power/Ethernet/Serial Connector Pinout	
J30J-15ZKP	Signal
1	RS232_RXD
2	RS232_TXD
3	RS232_GND
4	5V Output
5	100-Base T ETH0 M1P
6	100-Base T ETH0 M1N
7	100-Base T ETH0 M2P
8	100-Base T ETH0 M2N
9	Sbus
10	Sbus_VCC
11	Sbus_GND
12	GND IN
13	GND IN
14	VCC IN
15	VCC IN

3.4 High-power Airborne Radio (Lron Gray-9+2)



Power/Ethernet/Serial Connector Pinout	
9+2	Signal
1	ETH_RX-
2	ETH_RX+
3	ETH_TX-
4	ETH_TX+
5	-
6	5V OUT
7	RS232_TXD
8	RS232_RXD
9	RS232_GND
+	VCC IN
-	GND IN

4.5 High-power Airborne Radio (Lron Gray-J30J-25)



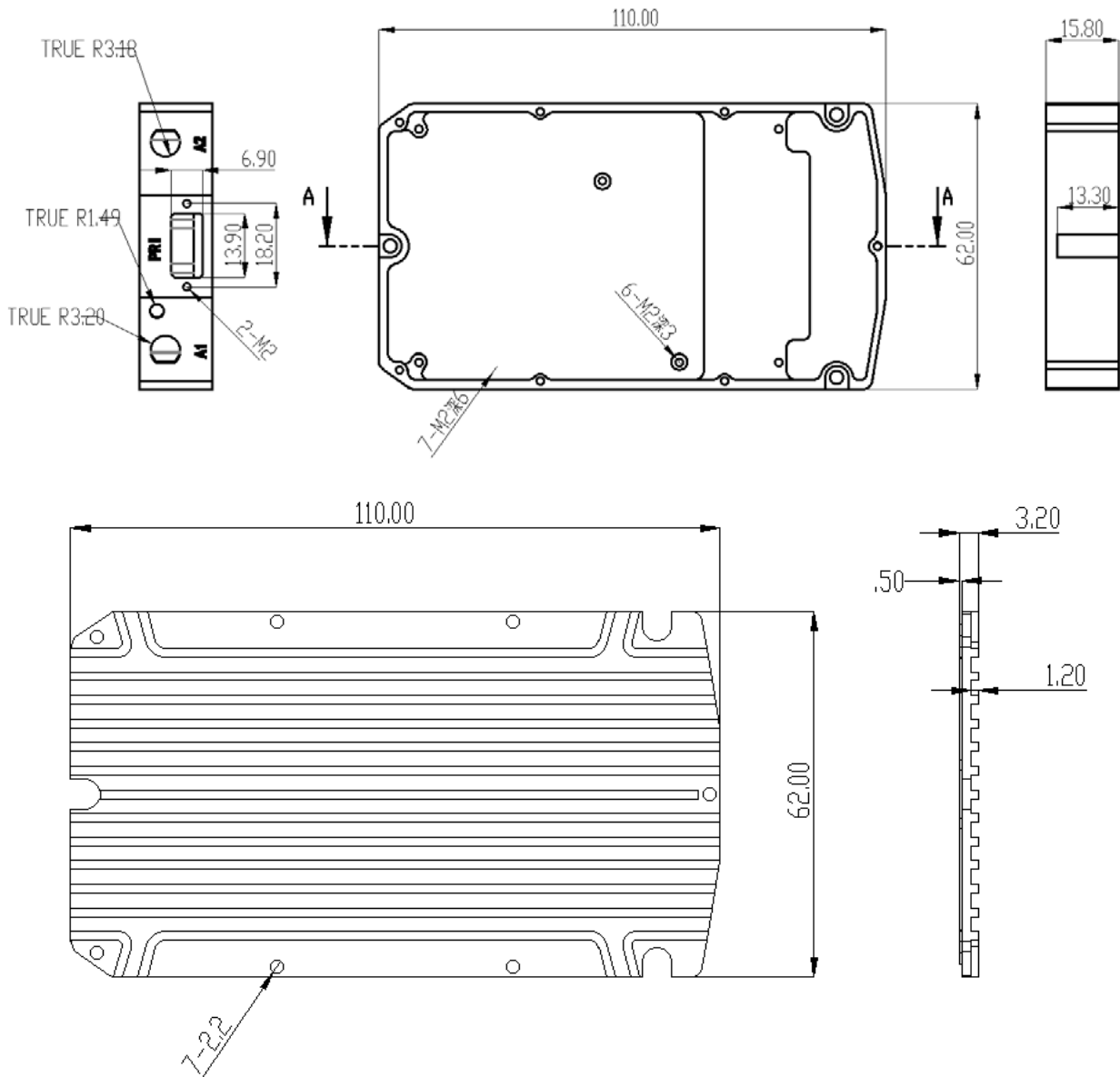
J30J-25 芯

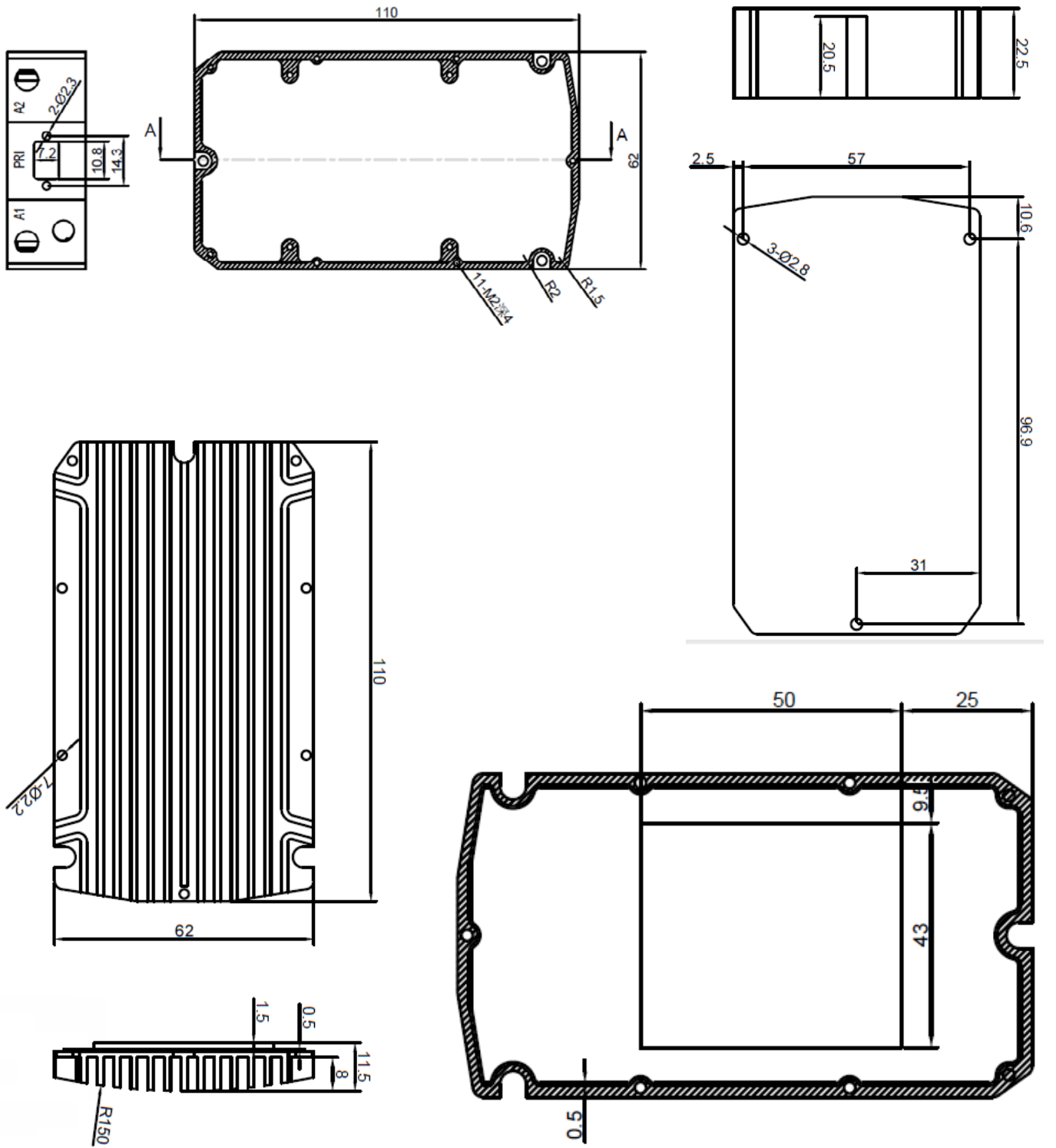


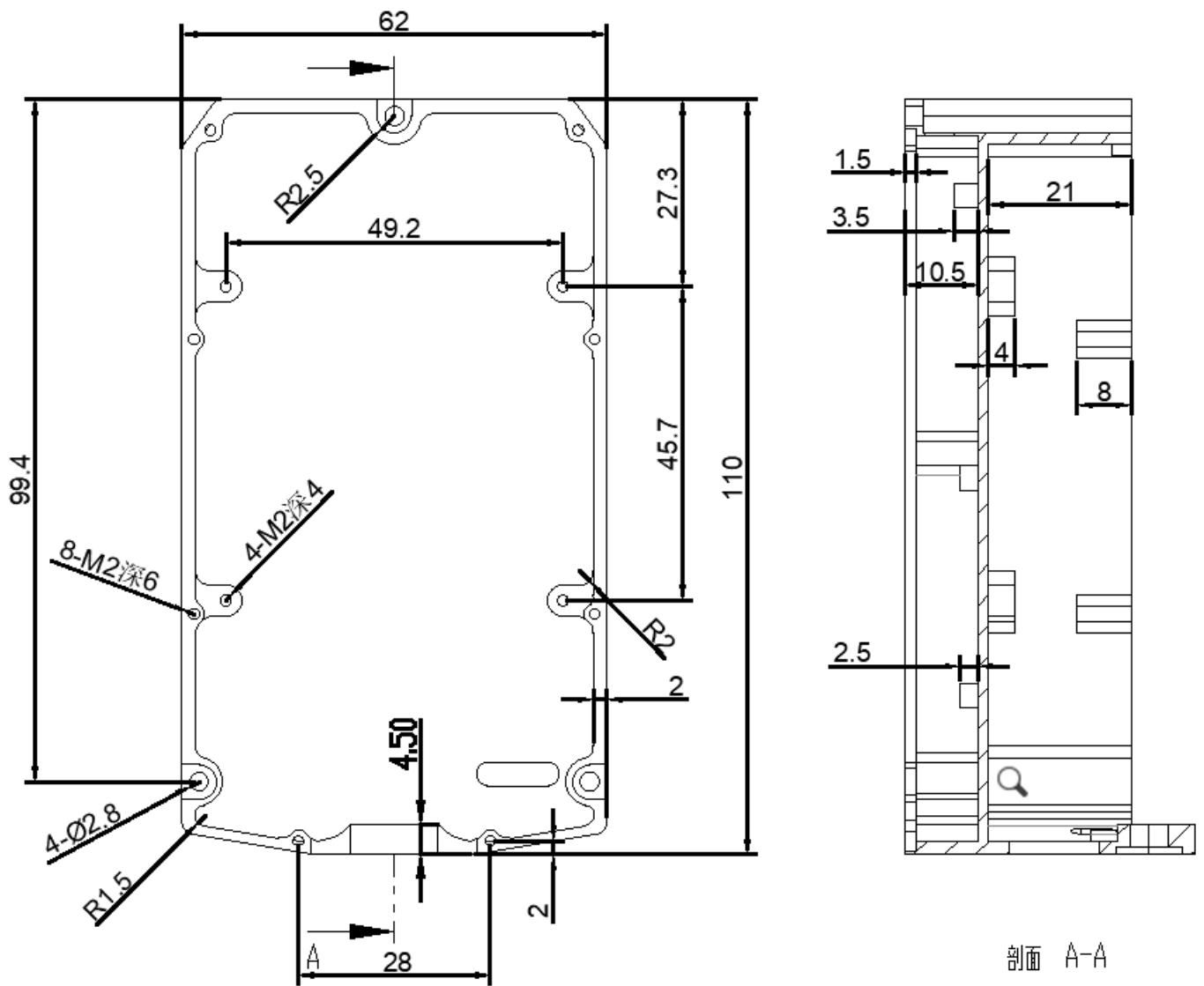
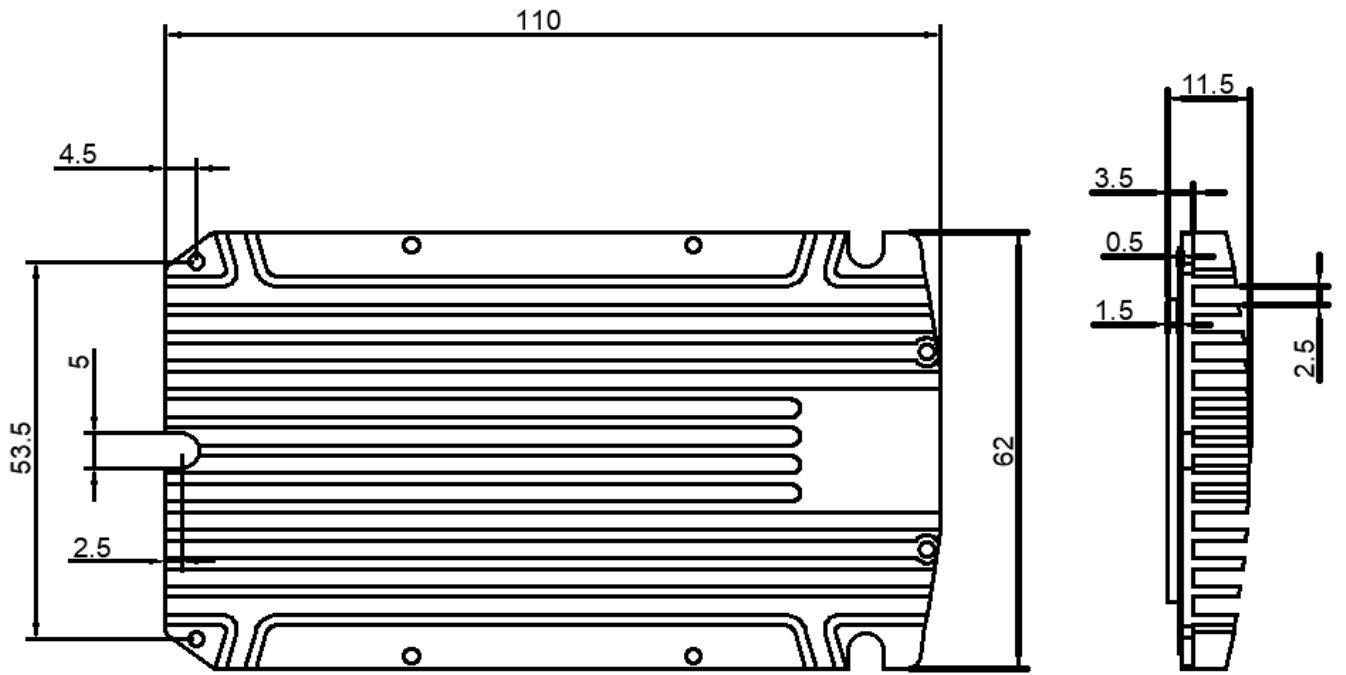
Power/Ethernet/Serial Connector Pinout	
J30J-25ZKP	Signal
1	ETH_RX+
2	ETH_RX-
3	ETH_TX+
4	ETH_TX-
5	VCC IN (+)
6	
7	
8	
9	
10	
11	
12	RS232_RXD0
14	
15	
16	
17	5V OUT
18	RS232_RXD1
19	RS232_TXD1
20	RS232_GND1
21	GND
22	
23	
24	
25	

4. Airborne Radio Dimension Figure

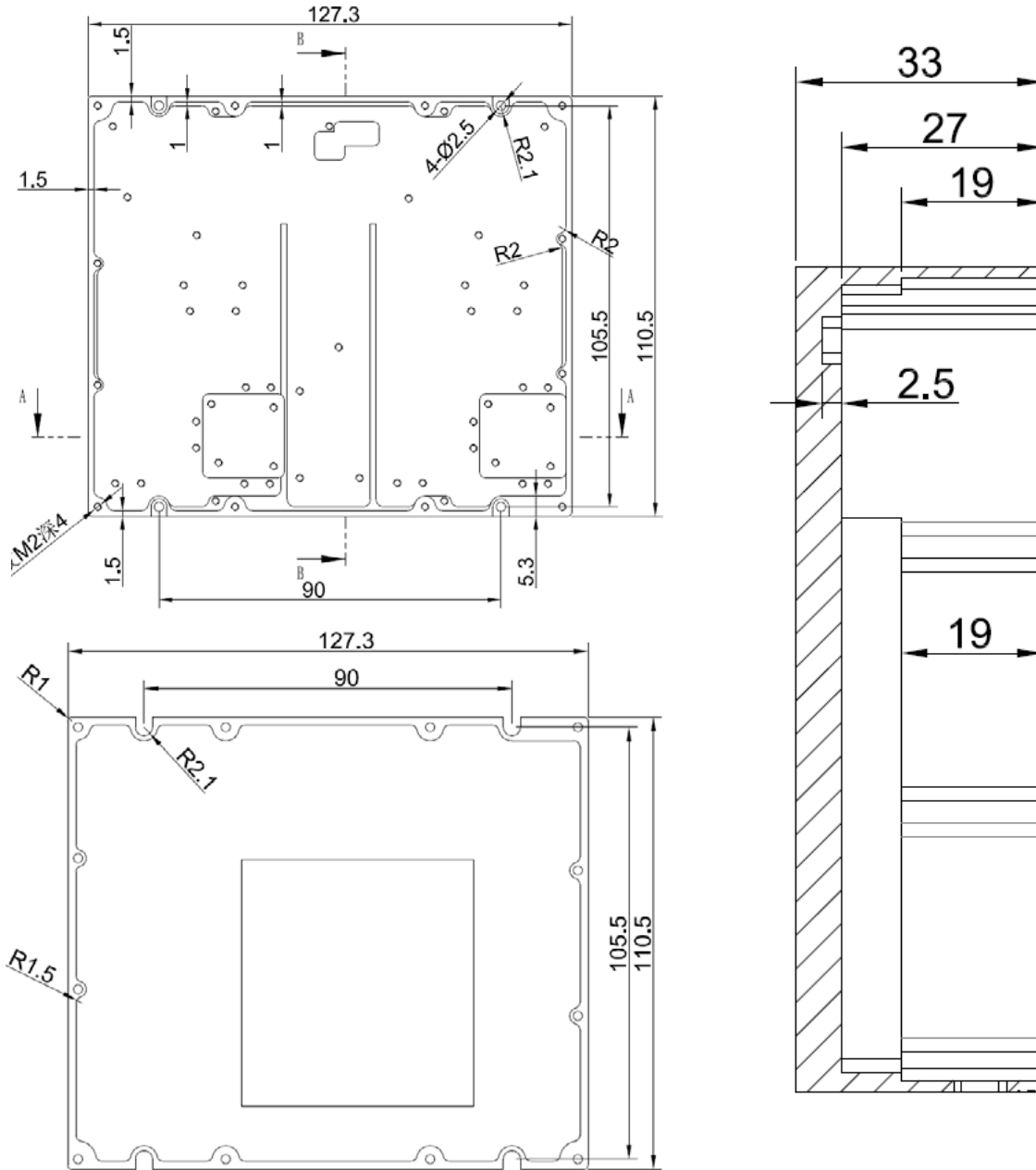
4.1 Airborne Radio (Lron Gray)





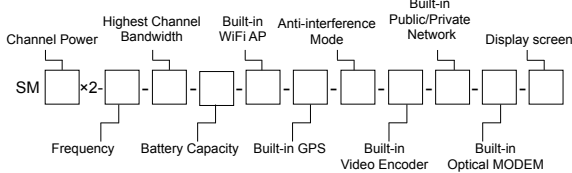
4.2 Airborne Radio (Black)


4.3 High-power Airborne Radio (Lron Gray)



5. Airborne Radio Model Name

Model Name:



Channel Power (W)	Frequency (MHz)	Highest Channel Bandwidth(MHz)	Battery Capacity (Wh)	Built-in WiFi AP	Built-in GPS	Anti-interference Mode	Built-in Video Encoder	Built-in Public/Private Network	Built-in Optical MODEM	Display Screen
0.5,1	600,U	10	0(N)	0(N)	0(N)	0(Single Frequency)	0(N)	0(N)	0(N)	0(N)
2	1400,L		76,114	1(Y)	1(Y)	1(Intelligent Channel Selection)	HDMI	4G/5G	1(Y)	2(2")
10	2300,S		214,427			2(Autonomous Frequency Hopping)	SDI/AV	4G LTE CPE		4(4")
20	4500,C									

SM2×2-1400-10-0-1-1-0-HDMI-4G/5G-0-0, Express: 2W×2, L Band, Maximum Channel Bandwidth 10MHz, With WiFi AP, With Positioning Module, With Intelligent Channel Selection, Built-in HDMI Coding, Built-in 4G Public Network Module Airborne Radio.

6.DJ Series UAV Supporting With HD Video Data Transmission/ Data Link, And Mesh Ad Hoc Networking

Broadband Ad Hoc network Radio, providing network ports, video ports, multiple serial ports, for drones and ground command centers, to achieve long-distance flight control data link, high-definition video channel, while automatically providing a wide range of communication relays for emergency communication networks.

Radio provides network port, HDMI/SDI/AV video interface, and 232/485/422/TTL or S bus asynchronous data interface.



2Wattx2 Customized Airborne Radio
(7.5x6.5x6.5cm/695g,built-in 8 hours for battery life)
IP&WiFi AP&HDMI/SDI,RS232&S bus



2Wattx2 Airborne Radio
(External power supply 9-28V/2A)
IP&WiFi AP&HDMI/SDI,RS232&S bus



2Wattx2 Handheld Radio
IP&WiFi AP&HDMI/SDI,RS232&S bus

